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A DICTIONARY OF SPANISH  
MINING TERMS

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A DICTIONARY  
OF  
SPANISH AND SPANISH-AMERICAN  
MINING, METALLURGICAL  
AND ALLIED TERMS

TO WHICH SOME  
PORTUGUESE AND PORTUGUESE-AMERICAN  
(BRAZILIAN) TERMS ARE ADDED

BY  
EDWARD HALSE, A.R.S.M.

MEMBER OF THE INSTITUTION OF MINING AND METALLURGY, OF THE NORTH  
OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS,  
OF THE BRITISH AND AMERICAN INSTITUTES OF MINING  
ENGINEERS, MIEMBRO CORRESPONDIENTE DE LA  
SOCIEDAD CIENTIFICA "ANTONIO ALZATE,"  
MEXICO



LONDON  
CHARLES GRIFFIN & COMPANY, LTD.  
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## INTRODUCTION

THE author has endeavoured, by the copious use of cross-references, to make this work as useful as possible.

All provincial terms are, where possible, referred back to standard terms, under which lists of synonyms, and equivalents in French, German, and, in some instances, Portuguese, are given. In short, no pains have been spared to make the dictionary as complete as possible, and it is hoped that it will supply a long-felt want.

For the mining terms used in Spain, the author is largely indebted to the standard treatises of Ezquerria del Bayo and Manuel Malo de Molina, and the smaller text-books of Moncada y Ferro, F. Gillman and Luis Carrión.

For the metallurgical terms used in Spain, the works of Jerónimo Ibran, Barinaga y Corradi, and Sánchez y Massia have been consulted.

As the author resided for some years in Mexico and Colombia (South America), the terms used in those Republics are naturally more fully represented in this work than those of other Spanish-American countries.

For the sake of English readers, words beginning with, or containing, the letters Ch, Ll, and Ñ are arranged alphabetically under C, L, and N respectively.

The Supplement, consisting mainly of provincial terms, was prepared while the rest of the work was being printed.

EDWARD HALSE.

15 CLARENDON ROAD,  
HOLLAND PARK AVENUE,  
LONDON, W.  
*February 1908.*





## LIST OF PRINCIPAL WORKS CONSULTED

- ACADEMIA, "Diccionario de la Lengua Castellana por la Real Academia Española," 13th ed., Madrid, 1899.
- "Anales del Ministerio de Fomento de la República Mexicana," Mexico, 10 vols., 1877 to 1888.
- Ansa, José Vicente de, "Informe al excelentísimo Señor Ministro de Guerra y Hacienda de Indias," MS., 1793 (a Report on the Mines and Mills of Tasco Guerrero, Mexico).
- BÁRCENA, Mariano, "Tratado de Geología," Mexico, 1885.
- Baretti, *see* Neuman.
- Bertolio, S., "Manuel del Minero y del Buscador de Minas," traducido de la 2ª edición italiana, por Carlos Huelin, Madrid, 1903, pp. 389 (pocket).
- "Boletín de Agricultura, Minería y Industrias," Mexico, 1891 *et seq.*
- "Boletín de la Sociedad Nacional de Minería," Santiago de Chile (monthly).
- "Boletín del Cuerpo de Ingenieros de Minas del Peru," Lima, 1902 *et seq.*
- "Boletín del Instituto Geológico de México," Mexico, 1895 *et seq.*
- Burkart, Joseph, "Aufenthalt und Reisen in Mexico—in den Jahren 1825 bis 1834," 2 vols., Stuttgart, 1836.
- CARRIÓN, Luis, "Curso de Explotación de Minas," Pachuca (Mexico), 1889.
- Chalon, Paul F., "Aide-Mémoire du Mineur," Paris, 1895 (contains a small Glossary of French, English and Spanish terms).
- DAHLGREN, C. B., "Minas históricas de la República Mexicana," Mexico, 1887, pp. 241, 20 Maps and Plates (a translation of the American work "Historic Mines of Mexico").
- Duport, St. Clair, "De la Production des Métaux Précieux au Mexique," Paris, 1843.
- Duque, Antonio J., "Memorandum de Bolsillo," Medellin (Colombia), 1896.
- Dwight, A. S., "A Glossary of Spanish-American Mining and Metallurgica Terms" (*Trans. Am. Inst. M.E.*, vol. xxxii, 1902, 29 pages).
- ELWES, A., "A Dictionary of the Spanish Language—including a large number of Technical Terms used in Mining, Engineering, etc.," London, 1882.
- "A Dictionary of the Portuguese Language," 4th ed., 1898.
- Ezquerria del Bayo, Joaquin, "Elementos de Laboreo de Minas," 2nd ed., Madrid, 1851, pp. 584, with Atlas of 16 Plates. NOTE.—The first edition was published in 1839.
- GAMBA, Fortunato Pereira, "Riqueza Mineral de la República de Colombia," Bogotá (Colombia), 1901, pp. 256.

## LIST OF PRINCIPAL WORKS CONSULTED

- GAMBOA, Francisco Javier, "Comentarios á las Ordenanzas de Minería, etc.," Madrid, 1761. (This work contains a valuable glossary of mining terms used in Mexico.)
- GARCÍA, Andres, J. R. V., "Dictionary of Engineering Terms in English and Spanish, London, 1906, 150 pp. (pocket).
- GILLMAN, F., "Elementos de Minería ó Laboreo de Minas y Preparación mecánica de las Menas" (tirado aparte de la "Enciclopedia Popular Ilustrado de Ciencias y Artes"), 9 Plates, Madrid, 1885, pp. 193.
- GUIM, J. B., "Nuevo Diccionario de la Lengua Castellana," 2nd ed., Paris, 1864.
- HUELIN Y ARSSU, Carlos, "Technological Dictionary in the English, Spanish, German and French Languages," Madrid, 1906, pp. 609.
- HUMBOLDT, Alexander von, "Essai politique sur le Royaume de la Nouvelle-Espagne," Paris, 1811.
- "Vues des Cordillères," etc.
- "Relation Historique du Voyage aux Regions équinoxiales."
- IBRAN, Jerónimo, "Album de Metalurgia General," Madrid, 1872, 4to, pp. 630, with Atlas of 87 Plates (includes mechanical preparation).
- LUCAS, Frederick, "Spanish-English Dictionary of Mining Terms," London, 1905, pp. 78 (pocket).
- LYON, G. F., "Journal of Residence . . . in Mexico . . . with some Account of its Mines," 2 vols. 1828.
- "MINING Glossary, English and Foreign, to which is added the Smelting Terms used in France, Spain and Germany," published by the *Mining Journal*, London, 3rd ed. 1871 (138 pp.).
- MOLINA, D. Manuel Malo de, "Laboreo de Minas," 2 vols, 1557 pages, with Atlas of 102 Plates (1192 figures), Cartagena, Spain, 1889-1893.
- MONCADA Y FERRO, "Ginés, Elementos de Laboreo de Minas," Cartagena, 1893, 357 pp., 15 Plates; 2nd ed. 1903, 346 pp., 16 Plates.
- "Elementos de Preparación Mecánica de les Menas," 2nd ed. Cartagena, 1902, 189 pages, 14 Plates.
- MUÑOZ, Francisco de P., "Tratado de la Legislación de Minas de Antioquia y Nociones generales sobre Minas," Medellin (Colombia), 1886, pp. 155, 45 Figures in text (31 pp. on mining).
- NEUMAN and BARETTI, "A Dictionary of the Spanish and English Languages," ed. M. Sevano, London, 2 vols., n.d.
- PONCE DE LEÓN, "Technological Dictionary, English-Spanish and Spanish-English," 2 vols. New York, n.d.
- RAMÍREZ, Santiago, "Noticia de la Riqueza Minera de México," Mexico, 1884.
- RESTREPO, Vicente, "Estudio sobre las Minas de Ora y Plata de Colombia," Bogotá (Colombia), 1888, 2nd ed., pp. 332.
- TILMANN, E., "Der Bergbau . . . von Guanajuato en Mexico," Münster, 1886, pp. 73, 5 Plates.
- Transactions of the American Institute of Mining Engineers, of the (British) Institution of Mining Engineers, and of the Institution of Mining and Metallurgy.*
- Tschudi, Dr. J. J. von, "Travels in Peru, during the Years 1838-1842." Trans. by Thomasina Ross, London, 1847.



## LIST OF PRINCIPAL WORKS CONSULTED

URIBE, A. J., *see* Velez.

Uribe, R. Uribe, "Diccionario abreviado de Galicismos, Provincialismos y Correcciones de Lenguaje," Medellin (Colombia), 1887, pp. 376.

VENATOR, Max, "English-German-Spanish-French Dictionary of the Terms employed in Mining, Metallurgy, and Chemistry, with the respective Auxiliary Sciences," Leipzig, 1897, pp. 126.

Velázquez, Mariano Velázquez de la Cadena, "A New Pronouncing Dictionary of the Spanish and English Languages," revised and enlarged by Edward Gray and Juan L. Iribas, London, 2 vols. (1900).

Velez, Fernando, y Antonio Jose Uribe, "Código de Minas colombiano concordado y anotado," 2nd ed., Medellin (Colombia), 1904.

Viala, L. Fernand, "Les Filons d'Or de la Guyane française; formation géologique . . ." Paris, 1886.

WARD, H. G., "Mexico in 1827," 2 vols., London, 1828.

## ADDENDA

Barinaga y Corradi, Luís, "Curso de Metalurgia Especial," Madrid, 1879, pp. 891, 2 Plates and 110 Figures in text.

Calogeras, João Pandiá, "As Minas do Brasil e sua Legislação," Rio de Janeiro, 1904, 3 vols.

Ferrand, Paul, "L'or à Minas Geraes, Brésil," Paris, 1894 (two parts published).

Hermosa, Francisco de P., "Manuel de Laboreo de Minas y Beneficio de Metales," Paris and Mexico, 1905, pp. 394 (relates chiefly to Mexican practice).

Michaelis, H., "A new Dictionary of the Portuguese and English Languages," 2nd ed., 2 vols., 1906.

Raimondi, Antonio, "El Perú," vol. iv, Lima, 1902 (the first volume published of the geological and mining portion of Raimondi's great work).

Sánchez y Massia, Manuel, "Metalurgia del Plomo," Madrid, 1893, pp. 376, with Atlas of 8 Plates.



# LIST OF PRINCIPAL ABBREVIATIONS USED

Acad.	Dictionary of the Royal Spanish Academy.
A. del M. de F.	"Anales del Ministerio de Fomento," Mexico.
adj.	adjective. (NOTE.—This is always placed before the corresponding substantive.)
alluv. m.	alluvial mining.
And. Sp.	Andalusia (Province), Spain.
Ant. Col.	Antioquia (Department), Republic of Colombia, S. America.
arch.	architecture.
Ar. Sp.	Aragón (Province), Spain.
Arg.	Argentine Republic.
assay.	assaying.
b. constr.	building construction.
blast.	blasting (hand-boring).
Bol.	Bolivia (Republic), S. America.
Bol. de A. M. é I.	"Boletín de Agricultura, Minería é Industrias," Mexico.
Bol. del C. de I. de M.	"Boletín del Cuerpo de Ingenieros de Minas del Perú."
Bol. de la S. N. de M.	"Boletín de la Sociedad Nacional de Minería," Chile.
Bol. del I. G. de M.	"Boletín del Instituto geológico de México."
bor.	boring (deep).
Braz.	Brazil.
Cal.	California (U.S.A.).
carp.	carpentry.
cb. m.	cubic metres.
c. eng.	civil engineering.
Cent. Am.	Central America.
Chih.	Chihuahua (State), Mexico.
cm.	centimetre.
c.m.	coal mining.
Col.	Colombia (S. America).
com.	commerce.
comp.	compare.
dm.	decimetre.
Dur.	Durango (State), Mexico.
el.	electricity.
eng.	engineering.
equiv.	equivalent or equivalents.
Estr. Sp.	Estremadura (Province), Spain.
Fr.	French.
geog.	geograph
geol.	geology.



# LIST OF PRINCIPAL ABBREVIATIONS USED

Ger.	German.
gold-mill.	gold-milling.
gr.	gramme or grammes.
Guan.	Guanajuato (district), Mexico. NOTE.—If after name of district or place = Guanajuato State.
Guerr.	Guerrero (State), Mexico.
Hid.	Hidalgo (State), Mexico.
hoist.	hoisting (or winding).
hydr.	hydraulics.
hydr. eng.	hydraulic engineering.
hydr. m.	hydraulic mining.
k. or kg.	kilogramme.
km.	kilometre.
L. Cal.	Lower (Baja) California (Territory), Mexico.
leg.	legal (term).
lit.	literally.
mas.	masonry (includes walling).
mech.	mechanics (applied).
mech. prep.	mechanical preparation (of minerals).
met.	metallurgy.
Mex.	Mexico. NOTE.—After name of place or district = Mexico State.
mg.	milligramme.
min.	mining.
Min. Ind.	"Mineral Industry" (New York annual).
miner.	mineralogy.
M. J. Gloss.	Glossary published by <i>The Mining Journal</i> (1871).
mm.	millimetre.
m.m.	metal mining.
Murc. Sp.	Murcia (Province), Spain.
naut.	nautical (term).
Nicar.	Nicaragua.
obs.	obsolete.
orig.	originally.
Pach.	Pachuca (district), Mexico.
Phil.	Philippines.
plott.	plotting.
Port.	Portuguese.
pp.	past participle.
Prov.	Province.
prov.	provincial.
pr. p.	present participle.
pump.	pumping.
quarr.	quarrying.
rail.	railroad or railway.
Sant. Sp.	Santander (Province), Spain.
S. Am.	South America.
Sinal.	Sinaloa (State), Mexico.
S. L. Pot.	San Luis Potosí (State), Mexico.
Sp.	Spain.
Span.	Spanish.
Span. Am.	Spanish America.
S. Sp.	South Spain.
st. eng.	steam engine.
surv.	surveying.
syn.	synonym or synonyms.
timb.	timbering.

# LIST OF PRINCIPAL ABBREVIATIONS USED

top. .	.	.	topography.	
transp.	.	.	transport.	
u. .	.	.	under.	
u. haul.	.	.	underground haulage.	
var. .	.	.	variety or varieties.	
Venez.	.	.	Venezuela.	
vent.	.	.	ventilation.	
vulg.	.	.	vulgarly (miners' expression).	
Zac. .	.	.	Zacatecas (district), Mexico.	NOTE.—After name of place or district = Zacatecas State.







# A DICTIONARY OF SPANISH MINING TERMS

**ABACÁ**, (1) the *Musa textilis* of the banana family, a native of the Philip-  
pines; (2) inner fibre of (1) or Manila-hemp (**cañamo de Manila** or  
**güembe**), *comp.* **cabulla** (2); (3) rope or any fabric made of (2).  
**ÁBACO**, trough (**artesa**) in which ores are washed, particularly gold (Acad.),  
*comp.* **gamella** (2).

## ERRATA

Page 65, line 26 from top, for "**uchanachacado**" read  
"**uchanchacado**."

Page 82, line 3 from bottom, for "carbon" read "coal or  
charcoal."

Page 200, line 7 from top, for "**JAMARACIÓN**" read  
"**JAMURACIÓN**."

Page 364, line 1, for "(2)" read "(3)."

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i (2).

**ABATAJE**, (from Fr. *abatage*), breaking ground, *syn.* **abatimiento**.

**ABATIMIENTO**, *see* **abataje**.

**ABEDUL**, common birch-tree.

**ABERTA**, *see u.* **hendedura**.

**ABERTURA**, (1) fissure, *see* **hendedura**; (2) driving of levels, opening  
out; **a. de galería**, driving, tunnelling; (3) **a. de la quebrantadora**,  
width of the mouth of a stone-breaker or "crusher"—the aperture  
(**apertura**); (4) re-opening of a vein, *see* **abra** (4).

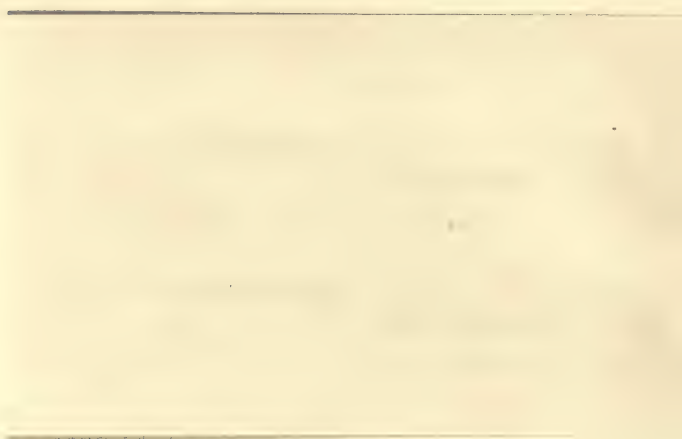
**ABETO**, pine, *see* **oyametl**.

**ABIGARRADO**, **DA**, adj. variegated in colour, *see u.* **cobre** (2).

**ABOCARDO**, drill [**barrena** (1)] for making the tubes of mine pumps  
(Acad.); counter-sinking drill (**Velázquez**).

**ABOCHORNARSE**, *see u.* **bochorno**.

**ABOCINADOR**, **a. de tubos**, tube-expander (**Ponce de León**).





## A DICTIONARY OF SPANISH MINING TERMS

**ABACÁ**, (1) the *Musa textilis* of the banana family, a native of the Philippines ; (2) inner fibre of (1) or Manila-hemp (*cañamo de Manila* or *güembe*), *comp.* *cabulla* (2) ; (3) rope or any fabric made of (2).

**ÁBACO**, trough (*artesa*) in which ores are washed, particularly gold (*Acad.*), *comp.* *gamella* (2).

**ABAJADOR**, (1) one who carries tools to miners working in shafts, etc., *syn.* *ferrero*, *comp.* *atajador*, *barrenero*, *buque*, *hatero*, *pepe*, *piquetero*, *rata*, *zorra* ; (2) stable-boy.

**ABAJO** ! lower ! (signal for letting down the kibble, etc.) *syn.* *Pachuca*, *Hid. Mex.* *cachani* ! *comp.* *arriba* ! *sota* !

**ABANADOR**, mining bellows (*Ponce de León*), *see* *fuelle* (1).

**ABANDONADO, DA**, pp. of *abandonar* ; *mina abandonada*, abandoned mine, *syn.* *castaña*, *mina desierta*, *see u.* *despilado, da*.

**ABANDONAMIENTO, ABANDONO**, abandonment (of a mine), *see* *desemparo* ; *see u.* *sistema*.

**ABANDONAR**, a. *una mina*, to abandon a mine, *see* *comer* (2), *cortar* (7), *desamparar*, *u.* *despilado, da*, *despueble*.

**ABANICO**, (1) mech. small crane, derrick, *see* *grúa* ; (2) rail. switch-stand, *see* *cambio* (1) ; (3) min. ventilator, fan, *syn.* *ventalle* ; a. *neumático*, suction-fan (*Ponce de León*), *see* *ventilador*.

**ABASTO**, (1) supply ; *abastos*, provisions ; (2) output, *see* *extracción* (2).

**ABATAJE**, (from Fr. *abatage*), breaking ground, *syn.* *abatimiento*.

**ABATIMIENTO**, *see* *abataje*.

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**ABETO**, pine, *see* *oyametl*.

**ABIGARRADO, DA**, adj. variegated in colour, *see u.* *cobre* (2).

**ABOCARDO**, drill [*barrena* (1)] for making the tubes of mine pumps (*Acad.*) ; counter-sinking drill (*Velázquez*).

**ABOCHORNARSE**, *see u.* *bochorno*.

**ABOCINADOR**, a. *de tubos*, tube-expander (*Ponce de León*).

- ABONO**, (1) security given for the performance of a contract ; (2) receipt in full or part ; (3) com. allowance, discount ; (4) manure, *e.g.*, nitrates.
- ABORTOS DE ORO**, Panamá, rich alluvial gold found in the deposits known as *hucicas*—a kind of nugget, *see pepita*.
- ABOVEDADO**, DA, adj. arched, vaulted, *see u. bóveda* (3) and (4).
- ABRA**, (1) bay or haven ; cove or creek ; (2) dale or valley ; (3) fissure in mountains, gorge, geol. break, *syn. cuarteadura, comp. hendedura* ; (4) re-opening of a vein, *see abertura* (4).
- ABRAZADERA**, (1) ring [*anillo* (1)] ; a. de hierro, iron ring, cleat, clamp used in looping the end of a wire-rope, *see mordaza* (2) ; (2) abrazaderas, hoist. sliding-pieces, shoes, slippers or ears which embrace the guides, or the guide-rod or conductors of cages, *syn. manos* (5), *salientes*, equiv. Fr. *main de fer*, Ger. *Leitschuh* ; (5) strap of an eccentric cam (Fr. *étrier*) ; (4) sierra a., *see u. sierra* (2) ; (5) Huelgáyoc, Peru, timb. a second cap-piece [*capa* (4)] placed a short distance below the first, to prevent the frame being crushed inwards. NOTE.—In this district the cap-piece is not jointed to the leg-pieces ; *see ménsula, comp. tiple* (2).
- ABRAZADOR**, a hook [*gancho* (1)] used in connection with the pole of a *noria* (1) ; a clip (Dwight).
- ABRE EL BAÑO**, *see baño* (2).
- ABREVADERO**, Ant. Col. alluv. m. mina de hoyos [*see hoyo* (3)] filled with water at the time of exploitation (Uribe).
- ABRIDURA**, Mex., enlargement of a space, so that miners may work freely (Dwight).
- ABRIGO**, Mex., (1) the width of a vein (Dwight), *see anchura* (1) ; (2) a. del carbón, Cerro de Pasco, Peru, argillaceous rock forming roof and floor of coal seams (E. D. Canseco).
- ABRILLANTADOR** (1) diamond-cutter, lapidary ; (2) tool used by (1).
- ABRILLANTAR** (Port. *abrilhantar*), to cut diamonds or other precious stones.
- ABRIR**, (1) to drive or open up, *see avanzar* ; a. una galería or un pozo, to drift or sink ; a. un tunel, to tunnel ; (2) a. el terreno (2), to bore, *see sondar* ; a. un barreno (1), to bore a blast-hole ; (3) *see zanja* (3).
- ABRONZADO**, Mex. (1) copper pyrites, *see u. pirita* ; (2) very rich grey copper ore (tetrahedrite), *syn. negro* (3), *see cobre* (2), *comp. cobrizo*.
- ABSORCIÓN**, absorption, *see u. válvula*.
- ACALABROTADO**, *see u. esparto*.
- ACAMPANAR**, Ant. Col., to clean a placer right down to the pay-dirt (Uribe), *see campana* (3).
- ACAMPANILADA**, *see u. vena* (2).
- ACANALADA**, *see u. polea* (2).
- ACANELADOS**, Zac. Mex. black, brown and yellow blende very finely disseminated, and very rich, being mixed with ruby silver and argentite, *see blenda* [Span. *acanelado* = cinnamon-coloured].
- ACANTERADO**, *see u. piedra pórfido*.



**ACANTILADOS**, natural vertical sections on the flanks or summit (*cima*) of a mountain (*Bárcena*); precipices or cliffs, *see* **cantil**, **precipicio**, *comp.* **bufa**, **sombrerete**.

**ACARDENILLADA**, ore with a greenish stain (due to carbonate of copper), *see* **cardenillo** (1).

**ACARREADOR** (Port. **acarretador**), carrier, porter, wagoner [*see* **carretero** (3)]; Mex. wood-carrier, *comp.* **tenatero**.

**ACARREO** (Port. **acarretadura**, **acarreto**), (1) carriage or conveyance (of minerals, etc.), *see* **transporte**; **a. por arrastre** (1), *see* **u. rastra** (1); **acarreos**, supplies; **cosas de a.**, goods forwarded; (2) **minerales** or **metales de a.**, derived or secondary ores, as ochres, etc., *e.g.*, **estaño de a.**, stream-tin; **acarreos**, float-rocks (Dwight); (3) **geol. drift**; **a. acuífero**, rock composed of rounded blocks, pebbles and gravel (Molina).

**ACCIDENTADO** (from Fr. **accidenté**), rough or broken (of ground), hilly.

**ACCIÓN** (Port. **ação**), (1) share in a mine, etc.; **a. industrial**, share; **a. librada**, paid-up share; (2) **leg. action**, lawsuit, right or ground of action in a suit (Dwight); **a. posesoria**, possessory action, action-at-law for establishing possession; (3) **stock**, capital in a company; (4) **mech. action**; **a. directa**, direct action.

**ACCIONISTA**, shareholder, stockholder.

**ACEITE**, (1) oil, whether of vegetable or mineral origin; **a. de arder**, **a. de linaza**, linseed oil; **a. común**, **a. de comer**, olive oil; **a. de carbón**, coal oil; **a. de petróleo**, *see* **u. petróleo**; **a. mineral**, mineral oil or naphtha; (2) resin which distils from the fir-tree, etc., **a. de palo**, balsam copaiba; (3) **a. de tierra**, *see* **u. betún**; (4) **a. de azufre**, **a. vitriolo**, concentrated sulphuric acid; (5) **Col. a** kind of timber, of which boards are made.

**ACEITERA**, **ACEITERO**, oil-cup (Fr. **godet à huile**), *see* **engrasador** (2).

**ACENDRAR**, to refine, *see* **afinar**.

**ACEPILLADURA**, (1) planing, *see* **cepillo** (1); (2) shavings.

**ACEPILLAR**, to plane, *see* **u. banco** (1), **cepillar**.

**ACEQUIA**, ditch or leat, equiv. **Braz. rego** (2), *see* **arbolón** (2), **balate** (2), **canal** (1), **canalejo**, **cauce** (2), **cava** (1), **cequión**, **corriente** (2), **montar**, **presa** (2), **toma**, **tragante** (2), *comp.* **principal** (1), **zanja** (1).

**ACEQUIADOR**, one who constructs ditches or leats, *see* **acequero** (2).

**ACEQUIAR**, to construct ditches or leats.

**ACEQUIERO**, (1) a man in charge of a ditch or leat; (2) **Ant. col. a** **peón** who makes a ditch or leat, *see* **acequidor**.

**ACERA**, (1) side-walk, *see* **ce.ra** (2); (2) the stones which form the face of a wall (**Velázquez**).

**ACERADO** (steely), (1) **Peras**, **Oaxaca**, **Mex.** massive iron pyrites, (**en pegaduras**) gold-bearing and occurring in compact milk-white quartz, when in crystals known as **acuescado** or **arriscado**. Both varieties are known by the generic name of **bronces** (**S. Ramirez**), *see* **oro**, **u. pirita**. (2) **Guadalcázar**, **S. L. Pot.**, **Mex.** a variety of cinnabar containing 7 per cent. of mercury (**S. Ramirez**); **H. F. Collins** says it appears to be

guadalcazarite, *but see* riolita, *see* cinabrio ; (3) Mex. stephanite ; for petlanque a., *see u.* petlanque ; (4) Potosí, Bol. jamesonite, a. blanco, a. lejizo, and a. zebroso are whitish, slaty and fibrous varieties respectively (M. Roberts), *see* paja (4) ; (5) Mex. grey copper ore, or any grey steely ore (Dwight) for plata azul acerada, *see u.* plata (2) ; (6) Arg. sulphide of silver mixed with iron in notable proportions (Hoskold).

ACERDESA, wad or bog manganese (Fr. *acerdèse*), *see* manganesa (2).

ACERILLO, Peru, galena in small crystals of a granular structure, *see* galena.

ACERO, steel ; a. afinado or refinado, charcoal steel, shear steel ; a. colado or fundido, cast steel ; a. de lupia, bloom steel ; a. de rosa, rose steel ; a. soldable or para calzar, welding steel ; a. trabajado, wrought steel ; a. vejigoso, blistered steel (Ponce de León).

ACHAPARERA, Mex. long-handled adze (Dwight), *see* azuela.

ACHICADOR, Mex. orig. workman employed in removing the water in leather buckets [cubos (1)], and conducting them to piletas (1) or wooden cisterns [cajas (2)] of the shaft (Gamboa), *syn.* achicunque ; *see* atecas ; any one who bails a mine.

ACHICAR, to bail water out of a mine, to clear it of water, to drain it. In Mexico botas are still sometimes used for this purpose. *See* atecas, baldear, chicar, desagüe (2), jamurar.

ACHICARRONADA, *see u.* tosca (4).

ACHICHINQUE, *see* achicador.

ACHIQUE, bailing water out of a mine, *see* achicar.

ACHÚA, Chile, a small earthenware dish used in making tests in the patio process, *see* chua, *u.* ensayador, *comp. u.* tentadura (1).

ACHUPALLA, Peru, a shrub used as fuel in smelting in rudimentary furnaces.

ÁCIDO, (1) acid ; a. carbónico, carbonic acid, *see* bochorño (1), humpe ; (2) a. negro, Pachuca, Mex. in the patio process, spent mother-liquor from the crystallising vats.

ACODADO, tubo a., bent tube or tube with an elbow (codo), *see also u.* eje.

ACODALADA, timb. stayed (Ponce de León).

ACODALAMIENTO, timb. propping, staying (Ponce de León).

ACODAR, to square timber or stone.

ACOMODANA, Peru, ore-deposit (Dwight), *see* depósito (1).

ACOPE, timb. the inclination given to leg-pieces in frames or sets.

ACOPIOS, waste-heaps or dumps (Chalon), *see* vaciadero.

ACOPLADO, adj. fitted, adjusted, mech. coupled, *see u.* horno (2).

ACOPLADURA, carp. and mech. coupling.

ACOPOLADO, (1) metal a., Sain Alto, Zac. Mex. fine yellow tinstone obtained by washing the tierras (4), *see* estaño (2) ; (2) Sultepec, Mex. ore containing fifty to sixty ounces of silver per ton.

ACOSTADO, *see u.* montón (3).

- ACOSTAR**, to incline to one side (of buildings); to take a horizontal dip (Ponce de León); **acostarse**, to dip in some new direction, *see* **metal** (5).
- ACREEDOR**, creditor.
- ACRISOLAR**, to refine in a crucible, *see* **afinar**.
- ACTIVAR**, Mex. to quicken the chemical reactions in the **torta** (Dwight).
- ACUEDUCTO**, aqueduct, *see u. servidumbre*; conduit, *see* **alcantarilla**, **arcaduz** (2), **cañería** (1).
- ACUESCADO**, *see u. acerado* (1).
- ACULLICO**, Peru, resting-hour (Dwight).
- ACUMULADOR**, (1) **a. de mineral**, large deposit for ore, *see* **almacén** (2); (2) hyd. accumulator, *syn. acumulador, regulador de presión*; mech. accumulator, *syn. condensador de fuerzas*; (3) el. accumulator.
- ACUÑACION**, coining, milling; coinage, *syn. amonedación*.
- ACUÑADOR**, coiner.
- ACUÑAR**, (1) to coin, *syn. amonedar, monedar*; (2) to wedge or fasten with wedges, *syn. calar* (2).
- ACUOSO, SA**, adj. watery, aqueous.
- ADARAJA**, *see* **diente** (5).
- ADARME**, half a dram, or one-sixteenth part of a Spanish ounce,  $1\frac{1}{4}$  dwts. nearly; 1 **adarme** = 3 **tomines** = 36 grains = 1.792238 grammes. An ore yielding 1 **adarme** of gold per **carga** contains about half an ounce of gold per ton of 2000 lb.
- ADELGAZAMIENTO**, (1) thinning out (of lodes, etc.); (2) thinning or robbing (of pillars), *see* **despilada**.
- ADELGAZAR**, (1) to thin out (of lodes, etc.); (2) to thin or rob (pillars), *see* **despilar**; (3) Ant. Col. to separate gold and concentrates [**jaguas** (3)] from sand and small stones, in order to facilitate the final washing.
- ADEMA**, a piece of timber (**madera**), usually rounded, and more or less long and thick, used in supporting mines [*comp. madero* (1)]; prop, shore, strut; **a. rolliza**, round timber; **a. auxiliar**, auxiliary timber for supporting others, *see* **carrera** (8), **estribado**, **jabalcón** (2), **riestra** (1), **sopanda** (2), **tornapunta**; (2) *see* **ademe**; (3) *see* **dema** (1).
- ADEMACIÓN**, timbering; *see* **entibación**; **a. pérdida**, lost timbering.
- ADEMADOR**, (1) timber man, *see* **palero** (4); planker, shorer; (2) mine carpenter, *syn. palero* (5), *see* **carpintero**.
- ADEMAR**, (1) to timber, *see* **entibar**. NOTE.—It is sometimes spelt **demar**. (2) Ant. Col. to make the sides of an artificial drain or ditch, *see* **dema** (1).
- ADEME**, "coverings or wooden linings, securing and preserving the shafts, pillars and works" (Gamboa, 1761); any lining of timber used in supporting underground works; *syn. adema* (2); **a. de anillo cerrado**, solid crib-timbering; **a. de cincha y estacada**, prop crib-timbering [*see also* **encubado** (1), **corral** (2)]; **a. de cajón**, prop crib-timbering, but with the frames or rings [**anillos** (2)] inclined at an angle equal to the complement of the general inclination of the strata; **a. de marco y estacada**, *see u. marco* (3); **a. de prestado**, provisional timbering, as **camada** (3), **puente** (3).



**ADINTELADO**, *see u. estemple*.

**ADMINISTRACIÓN**, (1) management; (2) trusteeship, administration; *en administración*, in trust; (3) *a. de correos*, post-office.

**ADMINISTRADOR**, (1) manager, *see superintendente* (1); (2) trustee, *see tenedor* (1).

**ADOBE**, (1) a brick made of straw, earth and dung, baked in the sun, but not burnt. *Adobes* are usually three-quarters of a *vara* long, half a *vara* wide, and from three to four inches thick, *comp. ladrillo*. (2) Met. smalls, when mixed with limestone and water, form a paste, which is made into cubes, called *adobes*, of from five to six centimetres side. These are allowed to dry and harden before being put into the furnace (S. Ramirez), *see u. tierra* (4). (3) U.S.A. reddish brown material covering basin-deserts, *comp. caliche* (4) or *tepetate* (6).

**ADOBERA**, a mould for making *adobes* (1).

**ADOBERÍA**, adobe kiln or yard, *comp. ladrillera* (1).

**ADOBÍO**, front portion of a blast-furnace (Acad.), *see horno* (2).

**ADOQUÍN**, (1) paving stone; (2) *adoquines*, hydr. m. block riffles, *see tendido* (5).

**ADOSADOS**, *see u. testera* (3).

**ADUANA** (Port. *id.* or *alfandega*), custom, custom-house; *en la aduana* com. in bond (Velázquez).

**ADUANAR**, (1) to enter goods at the custom-house; (2) to pay duty, to put in bond (Velázquez).

**ADUANERO**, custom-house official.

**AÉREO**, transporte a., *see u. transporte*.

**AEROFORA**, pneumatophore or portable self-containing apparatus for breathing fresh air or oxygen in noxious gases, *e.g.*, Fleuss and Walcher's apparatus (Fr. *aérophore*), *see respirador*; for parts of, *see careta*, *colchón*, *moderador*, *tapaboca*.

**AFILADERA**, whetstone, *see muela* (4).

**AFILAR** (Port. *afiar*), to sharpen tools, *see aguzar*; *pedra de a.* (Port. *pedra de afiar*), grindstone or whetstone, *see muela* (4).

**AFINACIÓN**, refining, *syn. afino*, *refinación*, *refinadura*; *a. por cristalización*, Pattinson process (Ponce de León).

**AF.NADOR**, refiner, *syn. refinador*.

**AFINAR**, to refine gold and silver, etc., *syn. acendrar*, *refinar*, *see acrisolar*.

**AFINO**, refining, *see afinación*.

**AFIRMACIÓN**, metalling, ballasting, *see firme*.

**AFIRMAR**, to metal a road; rail. to ballast, *syn. ballastar*.

**AFLOJADERO**, Mex. soft part of a vein (Dwight).

**AFLOJAR EL CANALÓN**, Ant. Col. alluv. m. treating the stuff which has accumulated in the ground-sludge [*canalón* (2)] by washing away the lighter and allowing the heavier material to settle (Uribe) [Span. *aflojar*, to loosen].

**AFLORAMIENTO**, geol. outcrop, outcropping, cropping, *syn. asomo*, Peru, *eflorescencia* (2), Villanueva del Rio, Sevilla, Sp. *salida* (de carbón),



- equiv. Fr. *affleurement*, Ger. *Ausstrich* ; *see* *brotazón*, *u.* *cogollo*, *crestón*, *quemazón*.
- AFLORAR**, geol. to crop out, outcrop, equiv. Fr. *affleurer*, Ger. *ausstreichen*, *see* *aflorescimiento*.
- AFORAR**, hydr. to measure the quantity of water in a stream or current in a unit of time.
- AFORO**, gauging, appraisement, *see* *aforar*.
- AFRECHERA**, Peru, finely divided amalgam produced with insufficient mercury (Dwight), *see* *amalgama* (*afrecho*, prov. Span. = bran).
- AFRENTAR UN HILO**, Ant. Col. to make a perpendicular cut in a vein to ascertain its thickness, dip and strike, *see* *frente* (4).
- AGA**, red marl (Ponce de León), *see* *marga*.
- AGACHADERO**, Mex. place in a level where the roof is low (Dwight).
- AGARRADERA**, *see* *u.* *mandíbula*.
- AGARRADERO**, the holder of a mine lamp (Molina), *see* *lámpara*.
- ÁGATA**, agate, *see* *cuarzo* ; *a.* *de cinta*, ribboned agate (Ponce de León), *see* *moloquita*, *prasma*.
- AGAVE**, American aloe (*Agave americana*), *syn.* *cabulla* (or *cabuya*) (1) *henequén* (1), *ixtle* (1), *pita* (1) ; *see* *cucuiza*, *linches*, *magüey*, *mecate* (1).
- AGENTE**, (1) agent [*see* *enganchador* (2)] ; *a.* *de minería*, Mex. under the new mining code the mining agent appointed by the Government in each district to receive denouncements, give possession, etc., *see* *arancel*, *despacho* (4), *u.* *junta* (6) ; (2) solicitor, attorney ; (3) broker, *a.* *de cambios*, bill-broker ; (4) *a.* *de correos*, Mex. postmaster.
- AGIO, AGIOTAJE**, (1) com. premium on exchange, discount on bills, etc. ; (2) stock-jobbing ; U.S.A. "ring" (Velázquez).
- AGIOTADOR, AGIOTISTA**, bill-broker, money-changer, stock-jobber.
- AGLOMERADO**, (1) briquette ; patent fuel ; (2) geol. agglomerate.
- AGLOMERADOR**, a furnace for producing partially calcined ore in large blocks, *see* *horno* (2).
- AGOJÍA**, channel or rivulet for the waste waters of mines (Acad.), *comp.* *cuneta* (2).
- AGOTADO, DA.** (pp. of *agotar*) ; *mina agotada*, an exhausted mine, *see* *agotar* (1) ; *vapor agotado*, exhaust steam, *see* *u.* *vapor* (1).
- AGOTADORA**, bomba *a.* pump. drawing-lift, *see* *u.* *bomba* (1).
- AGOTAMIENTO**, (1) *a.* *del mineral*, pinching out of ore, *comp.* *estrechamiento* ; (2) pumping, draining (Ponce de León), *see* *desagüe*.
- AGOTAR**, (1) *agotarse del mineral*, to pinch out or lose the ore, *see* *u.* *agotada*, *comp.* *estrecharse* ; (2) to drain off waters, *see* *desaguar* (1).
- AGRAMIZA**, *see* *tasco* (1).
- AGRIETADURA**, crack, fissure, *see* *hendedura*.
- AGRIMENSOR**, land-surveyor, *see* *apeador*, *geómetro* ; *a.* *de minas*, mine surveyor, *syn.* *Almadén*, Sp. *delineador*, equiv. Fr. *arpenteur de mine*, Ger. *Markscheider*.
- AGRIMENSURA**, art of surveying land ; *a.* *de minas*, mine-surveying, *see* *geometría*, *levantamiento* (1).

**AGRIO, IA**, adj. (1) acid or sour ; (2) brittle (applied to metals and ores), for *plata agria*, *see u. plata* (2) ; (3) rough (applied to roads).

**AGUA**, (1) water ; *a. arrimada*, Ant. Col., water brought along the base of a *barranca* to facilitate the work (Uribe) ; *a. de alimentación*, st. eng. feed water ; *a. de cantera*, natural moisture in stones when first taken out of the quarry (Acad.) ; *a. de descarga*, waste water ; *a. delgada*, water containing a small quantity of salts in solution ; *a. de manantial* or *de pie*, spring water ; *a. dulce*, fresh water ; *a. gorda*, water containing a large quantity of salts, principally gypsum, in solution, *syn. a. sosa* (Acad.) ; *a. llovediza*, rain water ; *a. potable*, drinking water ; *aguas*, mineral waters in general ; *aguas artesianas* or *de corriente forzada*, artesian waters ; *aguas de cabeza*, Peru, waters filtering into a mine from rains ; *aguas de superficie libre*, superficial waters ; *aguas termales*, thermal waters ; *aguas vertientes*, waters from a mountain or *sierra* ; (2) *aguas*, tides ; *a. chifles*, *a. muertas*, neap tides ; *a. vivas*, spring tides ; (3) *aguas madres*, mother-liquors, *syn. Chile, aguas viejas*, *see madre* (2) ; (4) lustre of diamonds or other precious stones ; (5) acid, *e.g., a. fuerte*, nitric acid, *a. regia*, aqua regia.

**AGUADA**, (1) flood of water which totally or partially inundates the workings of a mine (Acad.), *see aguar* ; (2) *aguadas*, Chile, indications of subterranean waters in the form of meadows or marshes, springs or sources, and, in the Cordillera region, of *arroyos* or *vertientes* (Bol. de la S. N. de M.), *see manantial*.

**AGUADOR**, (1) water-carrier ; (2) *aguadores*, binders or horizontal cross-pieces of the vertical wheel of a *noria* (1), which carry the rope or chain and jars [*cangilones* (2)] (Acad.) ; (3) bucket of a water-wheel, *see caja* (23).

**AGUARSE**, to drown out (of a mine), *syn. anegarse, inundarse, see aguada* (1), *comp. u. ahogado, da*.

**AGUATOCHA**, pump. *see bomba* (1).

**ÁGUILA** (eagle), *piedra del a.*, *see u. piedra*.

**AGUILÓN**, jib of a crane (*grúa*), *syn. brazo* (3), *flecha* (3).

**AGUJA**, (1) pointed peak of a mountain, *see pico* (6) ; (2) joint, *see junta* (2) ; (3) compass-needle, *see brújula* (1) ; (4) needle, blast. shooting-needle, *syn. espingüeta* (Venator), *varilla* (1) (Chalon), *comp. desatacad* ; (5) rail. switch-rail ; *agujas*, transp. switches ; *see cambio* (1) ; (6) Ant. Col., a small branch vein or stringer of ore ; Sp. a small *vena*, *see u. hilo* (3) and *veta* (1) ; (7) *a. infernal*, plug and feathers, equiv. Fr. *aiguille-coin*, *aiguille infernale*, Ger. *Federkeil* ; *see u. cuña* (1) ; (8) compass, *see brújula* (2).

**AGUJERO**, (1) blast-hole, drill-hole, *see barreno* (2) ; *a. de sonda*, bore-hole (deep), *see sondeo* ; (2) timb. a hitch or stemple-notch, *see huida* (1) ; (3) fissure, *see hendedura* ; (4) *a. de hombre*, manhole (of a boiler, etc.) ; *a. de paso*, manhole of a dam, *see boca* (7) ; (5) mouth, *boca* (3) or *brocal* (3) of a well.

**AGUJÓN**, Mex. surveying instrument with compass (Dwight).

**AGULHAS**, Braz. oxides of titanium associated with diamonds of particular deposits, called also *cericorias*, *captivo de chumbo* (Port. = needles).

**AGUZADERA** (Port. *aguçadeira*), whetstone, *see* *muela* (4).

**AGUZADURA** (Port. *aguçadura*), sharpening (of tools).

**AGUZAR**, to sharpen (drills, tools, etc.), *see* *afilar*.

**AHERRUMBRARSE**, (1) to acquire the colour or taste of iron, said especially of water which has passed through ferruginous formations (Acad.); (2) to be covered with rust of iron (*herrumbre*).

**AHOCINARSE**, to run (of rivers) between valleys and mountains by narrow passes, or narrow and deep ravines (Acad.).

**AHOGADO, DA**, adj. suffocated or drowned; *veta ahogada*, a vein covered by water, *comp. aguar*, *u. sofocado, da*; *mina ahogada*, Ant. Col. a placer whose exploitation is rendered difficult by being partially or wholly covered by a fall of ground (*revenidero* or *volcán*) or the *tonga* of which has been obstructed by the same cause, or which has been covered by gravel or tailings from a mine situated above it (Uribe).

**AHOGAR**, (1) *see u. cal* (1); (2) *ahogarse el oro*, Ant. Col. to lose gold by its being carried or dragged away by water (Uribe).

**AHAGO**, *see atufamiento*.

**AHONDADURA, AHONDAMIENTO**, sinking, excavation, digging, *see ahonde* (1).

**AHONDAR**, to sink, *see u. abrir* (1), *cavar* (2), *colar* (2), *comp. profundizar*.

**AHONDE**, (1) sinking, *syn. ahondamiento, comp. profundización*; (2) Span. Am. depth of seven *varas* which a mine must reach in three months in order to establish ownership (Acad.); a shaft to establish mining title (Dwight), *see pozo* (2).

**AHORCADA**, a drill [*barrena* (2)] is said to be *ahorcada* (lit. hung up) when it sticks in the borehole [*barreno* (1)].

**AHORQUILLADO, DA**, adj. forked, *see horquilla*.

**AHORQUILLAR**, to stay, to prop up with forks.

**AHUESADO**, *see u. panizo* (3).

**AHUMADO**, *see u. panizo* (3).

**AIRE**, (1) air or wind; (2) fire-damp, explosive air, inflammable air, *see grisú*; (3) *a. viciada*, foul air, *see u. ácido* (1), *bochorno* (1), *humpe, mofeta* (1), *vapor* (5).

**AISLADOR**, el. insulator.

**AJORNALAR**, *see jornal*.

**AJUSTADO**, *see u. cable*.

**AJUSTE**, (1) agreement, contract, *see contrato* (1); (2)

*ajustes*, couplings; (3) timb. joint or connection made by notching or scarfing, *syn. enlace* (2), *ensambladura*,

*see empalme* (1), *comp. costura* (1); *a. á inglete*,

*see Fig. 1*; *a. alternado*, *see Fig. 2*; *a. de cuchillo* or *a.*

*de tejado*, *see Fig. 3*, and *u. jabalcón* (2); *a. de húngara*, *see húngara*;

*a. de liso*; *see asiento* (1), *a. de oreja*, *see oreja* (2); *a. de trasdós*, *see*

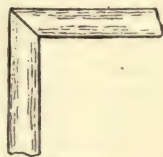


FIG. 1.  
Ajuste (3) á inglete.



Fig. 4, *syn.* garganta de lobo (Fr. gorge de loup), pie de mulo ; for other timber joints used in mining, etc. *see* cola (3) de rata, combona, entrada (8), horquilla (3), mediacaña (3), patillo, sobaco.

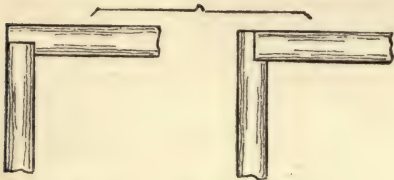


FIG. 2.—Ajuste (3) alternado.



FIG. 3.  
Ajuste (3) de cuchillo.

**ALA**, (1) mech. pinion, *see* piñon ; (2) leaf of a hinge, door, etc., *see u.* aleta ; (3) rim or flange, *see u.* cono (1), and Fig. 6 [alma (4)] ; (4) a. de mosca, Cerro de Pasco, Peru, very fine-grained granite (O. F. Piordte).



FIG. 4.—Ajuste (3) de trasdós.

**ALABANCA**, *see* alavanca.

**ALABANDINA**, (1) hyaline quartz, *see* cuarzo ; (2) alabandite or mangablende [MnS.], *see* manganeso (2).

**ÁLABE**, (1) mech. float-board of a water-wheel, *see* paleta (3) ; (2) cam, *see* cama (3).

**ALACRÁN** (scorpion), (1) Sonora, Mex., a wheel or pair of wheels with which the lama is sometimes turned over in the patio process (*see* Dr. Percy's Silver, Fig. 91), *see* repaso ; (2) swivel, *see* torniquete.

**ALAJITES**, Mex. altered rhodonite (Dwight), *see* manganeso (2).

**ALAMBIQUE**, still or condenser, *see u.* vasiija.

**ALAMBRADO**, wire cloth, wire work (Ponce de León).

**ALAMBRE**, (1) obs. copper or bronze ; (2) copper wire ; (3) iron or steel wire—wires are made into strands (cordones or ramales) to form a rope ; a. de cercar, galvanised wire-fencing ; a. de púas para cercar, barbed wire-fencing.

**ALAMBRE**, Port. amber, *see* ámbar.

**ÁLAMO**, poplar, used in timbering.

**ALARGADERA**, a. de sonda, bor. lengthening-rod (Ponce de León), *see* varilla (1).

**ALARIFE**, (1) obs. architect, builder ; (2) mine-mason, *syn.* a. mampostero, *comp.* albañil, asenador, mampostero, pedricero, pretilero.

**ALARMA**, alarm, a. de grisú, fire-damp alarm or indicator.

**ALAVANCA**, Braz. a tool used for splitting the harder rock ; it is a bar of iron from three to four feet long, terminated at one end by a wedge and at the other by a pick formed of a quadrangular pyramid (Saint-Hilaire—he spells it alabanca), *see* barra (1).



**ALBACEA**, administrator of a will, estate, mining property, etc.

**ALBAÑIL**, (1) mason, *syn.* *mampostero*, *see* *alarife* (2); (2) bricklayer.

**ALBAÑILERIA**, masonry or walling, *see* *mampostería* (2); *a. de bóvedas*, arch masonry; *a. de cimiento*, foundation walling; *a. en hileras*, coursed work (Ponce de León).

**ALBARADA**, wall of stones without mortar (Ponce de León), *see* *muro* (1).

**ALBARDA**, pack-saddle, *see* *aparejo* (3); *bestia de a.*, beast of burden.

**ALBARDILLA**, small pack saddle, *see u. torno* (2).

**ALBARDILLADO, DA**, adj. shaped like a pack-saddle; for *rodillo albardillado*, *see* Fig. 5; *see u. torno* (2).

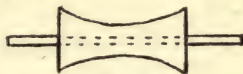


FIG. 5.  
Rodillo albardillado.

**ALBARRADÓN**, a mound or dike [*dique* (1)] erected to prevent inundation.

**ALBERCA**, (1) pond, pool [*charco* (1)], or reservoir, *see* *estanque* (1); (2) tank, *see* *estanque* (3).

**ALBERCÓN**, large pool or pond, *comp.* *charcón*.

**ALBERO**, whitish earth (Velázquez), *comp.* *blanquizal*.

**ALBÍN**, "bloodstone" variety of hematite, *see* *dionisia* (2).

**ALBINA**, (1) albite or soda felspar; (2) a variety of apophyllite of a beautiful white colour, found at Marienberg, Bohemia; (3) *a. de marisma*, white coating (*madre de sal*) left by salt marshes and lakes when they dry up, *see* *madre* (2); (4) geol. deep ground, covered by water in winter, and which whitens in summer.

**ALBRICIAS** (reward given for good news), Mex. blow-holes left by founders in the upper part of the mould so that the air can escape when the metal enters (Acad.).

**ALCABALA**, excise; duty on sales of real estate; *derechos de a.*, octroi.

**ALCABOR**, Murc. Sp. funnel, flue of a chimney, *see* *humero*.

**ALCACEÑA**, adj., *see u. talla* (1).

**ALCACHOFA** (artichoke), pump. snore-piece or strainer of a wind-bore (*aspirante*), *syn.* Mex. *chupador*, *solvadera*.

**ALCALDE**, (1) justice of the peace; (2) mayor of a city, or chairman of a council (of town government). NOTE.—In Spanish-America, under early Spanish domination, the *Alcalde Mayor* was the Governor—the *Alcalde* is now the *jefe municipal*, as distinguished from the *jefe político* or prefect.

**ALCANCE**, (1) balance, balance due or deficit; (2) *a. de un golpe*, mech. sweep (Ponce de León), *see* *carrera* (5); (3) extent of underground workings, etc.

**ALCANCÍA**, Pachuca, Mex. ore-shoot or -pass, *see* *paso* (2).

**ALCANTARILLA**, underground aqueduct (*acueducto*) or drain.

**ALCAPARROSA**, *see* *caparrosa* (1).

**ALCARATO**, Panamá, a tree whose wood may be counted on for a life of two or three years (E. G. Williams).

**ALCARRAZA** (unglazed jug), Mex. water-can used in drilling (Dwight).

**ALCAYATA**, mech. hook or bent pin (Fr. *goupille de crochet*).

**ALCOBA**, *see* **caja** (26).

**ALCOHOL**, (1) galena ; a. **de alfareros**, pottern-ore or cubical galena, *syn.* **alquifol** (3) ; a. **de hoja**, Linares, Sp. almost pure galena, containing a little silver (De Mesa y Alvarez), *see* **galena** ; (2) antimony, *see* **antimonio**.

**ALCOTANA**, mas. tool shaped like an adze at one end and an axe at the other (Acad.) or one extremity (gullet or pick-axe) or both [pick, *see* **pico** (2)] may be pointed.

**ALCRIBIS**, *twyer*, *see* **tobera**.

**ALDEA**, small village, hamlet, equiv. Brazil, **quintal**, *comp.* **pueblo**.

**ALEACIÓN**, (1) art of alloying metals ; (2) alloy, *see* **liga** (1).

**ALEAR**, to alloy.

**ALERCE**, (1) larch (*Pinus larix*), *syn.* **lárice** ; (2) a species of Chilean cedar (Guim).

**ALERO**, eaves of a roof, *see* **tendido** (1).

**ALETA**, (dim. of **ala**, wing), hoist. the sliding-piece or slipper of a cage, *see* **abrazadera** (2) ; **aletas**, leaf of a hinge [*see* **ala** (2)], teeth of a pinion, blades of the screw-propeller (**hélice**), etc. *see u.* **guijo** (2), **trépano**.

**ALETORIA**, rotary pump used in mines of shallow depth, *see u.* **bomba** (1).

**ALFAJÍAS**, **ALFARJÍAS**, pieces of wood, 14 cm. wide and 10 cm. thick, used in making frames and jamb-posts of doors and windows, wooden guides in the hoisting shaft, etc.

**ALFARDA**, thin beam (*see* **viga**) ; Ant. Col. long sloping poles used in roofing houses, a pair forms a **tijera** or **tijeras** (2).

**ALFARDÓN**, prov. washer, *see* **empaquetadura** (2).

**ALFARERO**, potter, *syn.* **barrero** (1), **ollero** (1), *see u.* **alcohol** (1).

**ALFILERES DE ORO**, Ant. Col. gold in filaments, or acicular gold (Uribe), *see* **oro**.

**ALGEZ**, **ALEGEZAR**, *see* **aljez**, **aljezar**, respectively.

**ALGODÓN**, cotton ; cotton-plant ; **algodón-pólvora**, cotton powder or tonite, *syn.* **algodón-pólvora nitrato** ; a. **explosible**, gun-cotton [ $C_{12}H_7O_{22}N_5$ ].

**ALGUAZA**, prov. hinge, *see* **bisagra**.

**ALICATES**, pliers, nippers, *see* **mordaza** (1), **tenazas** (2).

**ALIJADOR**, lighter, *see* **lanchón**.

**ALIMENTACIÓN**, mech. prep. feeding of a stamp-mill, etc. ; a. **de un horno**, met. charging of a furnace ; **aparato de a. automático**, st. eng., self-acting feed apparatus ; *see u.* **agua** (1), **bomba** (1).

**ALIMENTADOR**, mech. prep. ore feeder of a stamp battery, *comp.* **cebachores** ; a. **mecánico** or **automático**, automatic feeder ; a. **de un horno**, furnace charger ; a. **de la caldera**, boiler feeder.

**ALIMENTAR**, to feed a mill, etc., a. **un horno**, to charge a furnace, *see* **cargar** (2).

**ALIMENTO**, (food), (1) mech. feed ; (2) **alimentos**, Span. Am. a certain allowance made by the workers of a mine to the proprietors until the mine becomes profitable.

**ALIMONADOS**, sulphides and other salts of silver (Molina).

**ALINEACIÓN**, laying out a line, alignment; surv. draft or measurement made between two stations.

**ALINEAR**, to lay out by line, to line out, align.

**ALISADOR**, bor. regulating tool, *syn.* **calibrador**, equiv. Fr. **alésoir**, Ger. **Bohrlehre**.

**ALISAR**, to plane, *see u.* **garlopa**.

**ALISO**, alder-tree; **a. blanco**, common alder.

**ALJEZ**, (**ALGEZ**, Acad.), gypsum in its crude state, *syn.* **aljør**, **yeso** (1).

**ALJEZAR**, (**ALGEZAR**, Acad.), pit of gypsum, *see* **yesar**.

**ALJIBE**, (1) cistern, *see* **estanque** (3); (2) Ant. Col. fountain, spring, drain (Uribe).

**ALJOR**, *see* **aljez**.

**ALLANAR**, to level a road, railroad, etc. *see* **explanación**.

**ALMA**, (1) the core of a wire-rope, sometimes made of pitched hemp, sometimes of wire (**alambre**), *see u.* **maroma**; (2) body of a prop or other piece of timber; (3) mech. scaffolding pole, *syn.* **a. de andamio**; (4) the centre portion of a bent bar or cramp-iron [**gato** (2)], *see* Fig. 6; (5) central portion of a dam, etc.; (6) core of a casting.

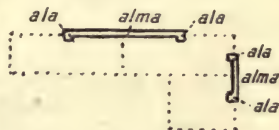


FIG. 6.—Alma (4) de gato (2).

**ALMACÉN**, (1) storehouse or warehouse, *see* **bodega** (1), **depósito** (6), **despensa** (1), *comp.* **alpende**; (2) large deposit for mineral on or near a wharf, *syn.* **depósito** (8); if covered with a roof = **acumulador** (1) de mineral.

**ALMACENJE**, warehouse rent, storage.

**ALMACENAR**, to store; to keep in bond; **almacenarse una bomba**, pump. to get choked (Ponce de León).

**ALMACENDADORA**, **capacidad a.**, storage capacity (of a reservoir, etc.).

**ALMACENISTA**, store-keeper, *comp.* **aperador** (*u.* **apero**); the person who sells goods in a warehouse.

**ALMADANA**, **ALMADENA**, **ALMADINA**, large heavy hammer of from 12 to 20 lb. in weight, *see* **martillo**.

**ALMADANETA**, (1) stamp, consisting of head [**calzadura** (2)] and stem [**mango** (2)], *see* **pilón** (4); (2) die, *see* **dado**; (3) small hammer for breaking stones (Ponce de León), *see* **martillo**.

**ALMADÉN** (Arabic, **almadín**), obs. mine or mineral deposit, *see* **mina** (2).

**ALMADENA**, **ALMADINA**, *see* **almadana**.

**ALMAGRA**, *see* **almagre**.

**ALMAGRAL**, place where **almagre** abounds.

**ALMAGRE**, a mixture of alumina, etc., with oxides of iron, forming red ochre or red earth, ruddle or raddle, *syn.* **almagra**, **almazarrén**, *see* **ocre**.



**ALMAINA**, mas. tool used for trimming stones (Molina); wooden mallet with iron hoops; large iron hammer (Ponce de León).

**ALMÁRTAGA**, **ALMÁRTEGA**, litharge, *see* litargirio.

**ALMAZARRÓN**, *see* almagre.

**ALMENADA**, *see* u. barra (4).

**ALMENDRA**, almond; diamond of an almond shape.

**ALMENDRILLA**, (dim. of *almendra*), (1) Guadalcázar, S. L. Pot., Mex. in the quicksilver deposits a mass of small fragments of limestone, generally siliceous, and roughly the size of an almond, which are sometimes loosely cemented by calcite and gypsum from solution, oftener by a tough clayey substance which has evidently been derived from the solution of the original limestone (H. F. Collins); **cuesco** (1) is a variety, but harder and with more clay (S. Ramirez), *see* mercurio (2); (2) Asientos Aguascalientes, Mex. quartz sometimes forming the matrix of copper veins, *see* cuarzo, duros, matriz (1).

**ALMENDRILLO**, kind of flexible wood used for making ropes of norias, wells, etc.

**ALMIJARA**, oil-tank formerly used in the Almaden mines for lighting purposes (Acad.); lighting (*alumbrado*).

**ALMIJARERO**, the man in charge of the *almijara* (Acad.) or lighting (*alumbrado*).

**AMILLA**, tenon, *see* espiga (2).

**ALMOCAFRE**, Col. in gold-washing a curved and pointed hoe or rake used by the natives for loosening the gravel, *see* Fig. 7; Port. pick or mattock used in working mines (Elwes).

**ALMOHADILLA**, *see* u. careta.

**ALMOJAYA**, put-log or cross-piece used in scaffolding (*andamio*).

**ALMONEDA**, an auction, *see* subasta.

**ALMUD**, a measure for grain, usually one twelfth of a *fanega*. In Spain 1 almud = gallon or 14·085 litres; in Col. = 18 litres (*see* pucha), *see* almuda.

**ALMUDA**, Port. an almud, or 16·739 litres.

**ALPENDE**, cabin or shed for keeping mining implements in (Acad.), *comp.* almacén (1).

**ALQUEIRE**, Port. ·380 bushel dry (in Lisbon also = 1·842 gal. wet) Azores ·329, Bahia, ·825, Madeira ·387, Oporto ·469, Rio Janiero 1·100, bushel dry (Spon).

**ALQUIFOL**, (1) galena or pottern-ore, *see* galena; (2) black-lead or plumbago, *see* grafita.

**ALQUILAR**, to hire; to let, to rent.

**ALQUILER**, wages, hire, letting, rent; a. de una casa, house-rent.

**ALQUITRÁN**, tar or liquid pitch; a. de hulla, coal-tar; a. mineral, *see* betún.



FIG. 7.—Almocafre  
(after C. Bullman).



**ALTA**, the hanging-wall of a vein or roof of a bed, *syn.* Mex. **alto** (2), **pendiente** (4), **tapa** (2), **techo** (1), equiv. Fr. **toit**, Ger. **Hangende**, *see u.* **respaldo**, *comp.* **bajo** (3); in New Almaden, Cal. U.S.A. the layer of clay on the hanging-wall of quicksilver deposits (Becker); *see* **alto**, **ta**.

**ALTAR**, (1) st. eng. arch of the boiler, water-bridge; **a. de caldera** or **paila**, bridge of a boiler, boiler-plate; **a. de humo**, flue-bridge (Ponce de León); met. bridge of a reverberatory furnace (Acad.), *see u.* **puente** (2); (2) Vizcaya Sp. single stope, (Acad.), *see* **grada** (2).

**ALTERNADOR**, alternator, *see u.* **dinamo**.

**ALTIPLANICIE**, top. plain at a high altitude, *see* **llano**.

**ALTITUD**, height; height above the horizon; height above sea-level; **a. aparente**, **a. meridiana**, **a. verdadera**, apparent, meridian, and true altitude respectively.

**ALTO**, **TA**, adj. high, elevated; **alta horno**, blast-furnace, *see u.* **horno** (2); **minas altas**, Ant. Col. alluvial mines situated above ordinarily available water; they are known as those of **sabana** and **sobresabana**, **aventaderos**, **criaderos** and **cerros**; *comp.* **minas bajas** (*u.* **bajo**, **ja**).

**ALTO**, (1) the upper part of a vein, bed or mine, *comp.* **bajo** (1); (2) Mex. the hanging-wall of a vein, *see* **alta**.

**ALTURA**, height or summit; altitude (**altitud**); height of a gallery, etc.; **a. de presión del agua**, hydr. m. head, *see* **caída** (4); **cortar alturas**, *see* **cortar** (5).

**ALUDEL**, an earthen condenser for quicksilver, *see* Fig. 7A (after Umlauff); **horno de aludeles** was invented by Lopez de Saavedra Barba, in use in Huancavelica, Peru, since 1663 (Umlauff), *see* **alvecas**, **cerracho**, *u.* **ichu**, **levante** (1), **mercurio** (2), **solera** (11).

**ALUMBRADO**, lighting, *see* **almijara**.

**ALUMBRAR**, to light; **a. aguas**, *see* **iluminar**.

**ALUMBRE**, alum; **a. de roca**, rock-alum, *see* **jebe**; **piedra a.** or **de a.**, **a. de piedra**, alumstone or alunite.

**ALUMBRERA**, alum-pit or mine.

**ALUMBROSO**, **SA**, adj. aluminous, *see u.* **tecacolote**.

**ALUTACIÓN**, nugget (**pepita**) or layer of gold in grains found at the surface in mines (Acad.).

**ALUVIAL**, geol. alluvial.

**ALUVIÓN**, (Port. **alluvião**), geol. alluvium; alluvion, wash, silt, *syn.* **aterramiento**, **llena**, *see* **derrubio**, *u.* **terromontero**, *comp.* **bateque**; **tierra de a.** (Port. **terra**, **terrenos d'alluvião**) alluvion, estuarine deposit; **a. metálico**, **placer**, *syn.* **criadero detrítico**; **oro de a.**, alluvial gold, *see u.* **oro**.

**ALVECAS**, Peru, name given to the three tubes leading from Barba's furnace to the lines of **aludeles** (Umlauff).



FIG. 7A.  
(after Umlauff).

- ÁLVEO**, (1) bed or channel of a river, *syn.* canal (11), cauce (1), Peru, hoyá (3), lecho (1), madre (1), equiv. Port. leito, *see* corredero; (2) source of a river.
- ALZA**, (1) a. de bomba, pump. lift (Ponce de León); (2) Peru, roof, *see* techo (2); (3) alzas, Peru, upper portion of a mine, as distinguished from the planes (1).
- ALZAPRIMA** (Port. alçaprema), lever, *see* palanca (1); a. en forma de L or 1, pump. quadrant; mech. fulcrum.
- ALZAR**, to draw, hoist; erect, construct.
- AMAGAMIENTO**, Ant. Col., drain, brook, pool, spring, fountain, arroyo, cañada (Uribe); it is almost the same as cañada (2), but of still smaller extension and importance (F. de P. Muñoz).
- AMAINADOR**, c.m. banksman, m.m. lander, *syn.* Mex. cajonero (2), equiv. Fr. receveur du jour, moulineur, decrocheur, Ger. Abzieher, *comp.* enganchador (1).
- AMAINAR**, to unload, kibbles, skips or cages at the surface.
- AMAIÑE**, c.m. unloading or changing kibbles, cages, etc., at the bank or surface.
- AMALGAMA**, amalgam, *see* afrechera, bollos (1), caja (1), copos (2), copella, cuerpo (1), débil, diario, estrujón, fuerte, pasilla, pasta (2), pella, piña (1), polveo.
- AMALGAMACIÓN**, (Port. amalgamação), amalgamation.
- AMALGAMADOR**, amalgamator, *syn.* Mex. cazeador.
- AMALGAMAR**, to amalgamate.
- AMAMOR**, Col. a tree, the heart of which is veined like tortoise-shell, and used for making walking-sticks and cabinets (Uribe).
- AMAÑOS**, tools and implements, *see* herramienta (1), *comp.* apero.
- AMARILLO, LLA**, adj. yellow; amarillo de montaña, yellow earth, ochreous clay (Ponce de León), *see* u. ocre; amarillos, Mazapil, Zac. Mex. gossan, *see* colorados.
- AMARRAR**, to tie; a. las aguas, Ant. Col. to free the excavation [hoyo (3)] made in the placer from the infiltration of water through the permeable pay-dirt [cinta (3)] by means of trinchos or dikes (Uribe); a. tonga, Ant. Col. alluv. m. to lessen the tonga of a mine.
- AMASADO**, *see* u. chimenea (4).
- AMASIJO**, mixture of plaster; a. ligero, light mixture, a. trabado, strong mixture; certain quantity of mortar; mas. lime paste, puddling, pugging (Ponce de León), *see* cimientó (3).
- AMATISTA, AMETISTA, AMETISTO** (Port. amethista, amethisto), (1) amethyst, *see* cuarzo; (2) amatista oriental, violet-coloured corundum (corindón).
- ÁMBAR**, (1) amber, *syn.* a. amarillo, *see* electro (1); (2) a. negro, jet, *see* azabache.
- AMETISTA, AMETISTO**, *see* amatista.
- AMIANTA, AMIANTO**, (Port. amiantho), amianthus of fine silky variety of asbestos (asbesto).
- AMIGDALÓIDEA**, *see* u. estructura.

- AMIGO**, horizontal stick, tied to the end of a rope, on which men sit when ascending or descending shafts, etc., *see* **bajada**, **caballo** (3).
- AMO**, (1) overseer, *see* **capataz** (3); (2) Mex. owner of a mine, etc., *see* **propietario**, *u.* **téquio** (2).
- AMOJONAMIENTO**, setting landmarks, *syn.* **mojonación**; marking the limits of a claim, *see* **mojón** (1).
- AMOJONAR**, to set landmarks, *syn.* **mojonar**; to mark the limits of a claim, *see* **mojón** (1).
- AMOLADERA**, grindstone or whetstone, *syn.* **piedra a.**, *see* **muela** (4).
- AMOLADOR**, (1) grinder or whetter; (2) steel for sharpening grindstone [**muela** (4)].
- AMOLADURA**, (1) sharpening, grinding; (2) **amoladuras**, fine sand which comes from the grindstone when sharpening tools (Acad.).
- AMOLAR**, to whet or grind, *see u.* **muela** (4).
- AMOLINAR**, Ant. Col. (1) to collect ore spalled in different points in order to send it to the mill; (2) in **minas de saca**, to collect the ore in order to wash it [**cernir** (2)] in the ground sluice [**canalón** (2)]; (3) to wash auriferous alluvium in a wooden box or gutter (Uribe.)
- AMONEDACIÓN**, coinage, *see* **acuñación**.
- AMONEDAR**, to coin, *see* **acuñar**.
- AMONTONAR**, to pile up, make into heaps.
- AMPARADO, DA**, pp. of **amparar**, **mina a.**, mine maintained in possession by payment of tax—not necessarily worked.
- AMPARAR**, to cover (title) (Dwight); **a. en la posesión**, leg. to maintain in possession (Velázquez).
- AMPARO**, protection; leg. the maintenance of the legal right of ownership by continual possession.
- AMPELITA**, (1) cannel-coal, *see* **hulla** (2); (2) **a. gráfica**, lithographic stone.
- AMPERIO**, el. ampère (Acad.).
- AMPLIACIÓN, AMPLIFICACIÓN** (enlargement), increase in number (of mining claims), *comp.* **reducción**.
- AMPOLLOSA**, rock structure containing cavities (Dwight) [from **am-polla**, blister or bubble].
- ANCHO**, (1) width, *see* **anchura** (1); (2) **a. de la vía**, transp. gauge, *syn.* **anchura** (2), **entrevía** (1), equiv. Port. **bitola**, Fr. **largeur**, Ger. **Spurweite**; **a. interior**, gauge measured from inside the rails; **a. entre ejes**, gauge measured from the centres of the rails, *comp.* **entrevía** (2).
- ANCHURA**, (1) width or thickness of a bed or mineral deposit, *syn.* Mex. **abrigo** (1), **espesor**, **grueso** (1), **poder** (2), **potencia** (2), equiv. Port. **espesura**, Fr. **épaisseur**, **puissance**, Ger. **Mächtigkeit**; (2) transp. gauge, *see* **ancho** (2); (3) widening (of a vein, etc.), *see* **ensanche** (1); (4) width of a gallery, etc.—for width of timber, *see* **tabla** (3).
- ANCHURÓN**, (1) a large chamber [**cámara** (5)] made in working large masses in chambers (Ger. **Stockwerksbau**), or in working a chamber deposit, *see* **salón** (2), **tabique** (1), *comp.* **fornilho**; (2) a plat, *see* **cón-cava**; **a. de enganche**, on-setting plat.



**ANCLA**, anchor ; hook.

**ANCLACIÓN**, Almería, Sp. station on wire ropeway, the object being to divide the rope into two lengths (Molina).

**ANCLAR**, *see* **encallar**.

**ANCÓN DE TIERRA**, Mex. projecting or salient corner of a claim (Dwight).

**ANDALUCES**, miners from Andalucía, Spain, who are famous for the excellent way in which they separate lead-ore underground (Molina).

They also manipulate the **garbillo** (1).

**ANDAMIADO**, **ANDAMIAJE**, scaffolding, *see* **andamio**.

**ANDAMIO**, scaffold, scaffolding, *syn.* **andamiado**, **andamiaje**, *see* **alma** (3), **almojaya** ; **a. colgante**, **a. volante**, c.m. cradle, scaffold or walling-stage, *see* **descanso** (4).

**ANDAR**, to act, applied to machines ; **a. de una máquina**, speed of an engine ; **a. en carguero**, *see* **carguero** (1).

**ANDARAJE**, wheel of the **noria** (1) to which the rope is fixed which carries the buckets or jars (**arcaduces**) (Acad.).

**ANDARIVEL**, wire-rope tramway or cableway, *see* **u. ferrocarril**, and **vía** (3).

**ANDÉN**, (1) path of a horse or mule round the draw-wells, floor of a horse-whim, etc. [*see* **piso** (8)] ; (2) side-walk (of a road) ; tow-path of a canal ; bank of a railway ; (3) rail. platform, *syn.* **desembarcadero** (2).

**ANEGADA**, drowned out, *see* **aguararse**.

**ANEMIA DEL MINERO**, miners' anæmia.

**ANEMÓMETRO**, vent. anemometer or instrument for measuring the velocity of an air-current.

**ANGELAN**, *see* **u. candeia** (2).

**ANGOSTURA**, (1) narrowness, *see* **estrechez** ; (2) narrow pass (of a mountain or river), *see* **paso** (4).

**ÁNGULO**, angle or corner ; carp. cant or edge (Ponce de León).

**AÑILADO**, **cobre a.**, indigo-coloured ore of copper, *see* **u. bronce** (3).

**ANILLA**, buckle, loop or ring, *see* **anillo** (1).

**ANILLO**, (1) ring of metal [*see* **abrazadera** (1), **anilla**] ; link (**eslabón**) of a chain ; bor. boring-bit or crown [*see* **corona** (1)] ; mech. prep. shell of crushing-rolls ; **a. del émbolo**, **a. para pistón**, st. eng. piston ring ; *see* **argolla** ; (2) **anillos**, Zac. and Pach. Mex. continuous frames or rings of timber in a shaft, *e.g.*, solid crib-timbering, *syn.* **Guan. marcos** (3), *see* **u. ademe** ; (3) knobs in wire-ropes in Otto's system of wire ropeways ; (4) **a. de empaque**, washer, *see* **empaquetadura** (2) ; **a. de empaquetado**, *see* **u. empaquetado** ; (5) **a. libre**, bor. swivel ; (6) each one of the two series of segments [**camones** (2)] forming the rim or periphery of a water-wheel, *syn.* **cerco** (6) ; rim of any wheel, *see* **aro** (3), **pina** (2).

**ANÍMA**, *see* **alma** (1), **maroma**.

**ÁNIME**, Col. wood suitable for making boards.

**ANODO**, anode, *comp.* **catodo**.



- ANQUERÍA**, Peru, silver ore looking like cubical galena (Dwight).
- ANTA**, Peruvian word for copper; **a. chacra**, copper mine. [Humboldt thought the name Andes came from this word, but Raimondi derives it from Anti, the name of a tribe of Indians.]
- ANTECRISOL**, met. fore-hearth of shaft-furnace, *comp. reposador exterior*.
- ANTEPECHO**, *see banco* (2).
- ANTIGOS**, Braz. "old man" or old workings, *comp. antiguos*.
- ANTIGUO**, *see u. trabajo* (1); **antiguas, antiguos**, Mex. Indian or Spanish mines or mines of Colonial times, *comp. antiguos*.
- ANTIMONIAL**, for **plata a.**, *see u. plata* (2).
- ANTIMONIO**, (1) antimony (metal), *syn. alcohol* (2); (2) ore of antimony; **a. blanco**, valentinite; **a. gris**, grey antimony ore or stibnite, *syn. diente* (4); **a. rojo**, kermesite; *see antimonioso*; **nolí, u. pinta** (1).
- ANTIMONIOSO**, metal **a.**, Huitzuco, Guerr. Mex. livingstonite, an ore of antimony and mercury [ $2Sb2S3HgS$ ], *comp. hebrudo*, *see mercurio* (2).
- ANTORCHA**, torch made of the branches of resinous pine, sometimes used in mining, *see hacha* (2), *mecha* (3).
- ANTRACITA**, anthracite, *syn. hulla brillante, hullita*.
- ANUNCIO**, advertisement; com. statement, advice; Col. announcement of a **denuncio** by publication in the official gazette (**periódico oficial**).
- APAGAR**, to quench, extinguish; mech. to make dead, deaden; **a. la cal**, to slake lime; **a. un horno**, to blow out a furnace, *see descarga* (4).
- APALANCAR**, (1) to move with a lever; (2) to get ore, *see arrancar*.
- APARATO**, apparatus, appliance, engine, machine; **a. de alimentación**, st. eng. feed apparatus; **a. de caída libre** or **corredera**, bor. free-falling apparatus, *see u. junta* (5); **a. de caída libre por reacción**, de punto de apoyo, and **corredera por presión de agua** (Fr. *coulisse à pression d'eau*) are three free-falling appliances invented by L. Dru; **a. de distribución**, distributing apparatus of a water-pressure engine; **a. de extracción**, hoisting engine; **a. soplante**, met. blower, *see soplante*; **aparatos**, *see jaula* (2).
- APAREADO**, coupled in pairs, *e.g.*, **cilindros apareados** or **conjugados**, cylinders in couples.
- APAREJAR**, to furnish, rig or tackle; to prepare timber or stones for a building; **a. la madera**, carp. to dress.
- APAREJO**, (1) tackle, block and fall, *syn. polipastos*; **a. diferencial**, differential pulley; (2) harness for beasts of burden, *see arnés* (1); (3) pack-saddle, *syn. albarda, basto* (1), *see enjalma*; (4) mas. bond (Ponce de León), *see trabazón*; (5) **aparejos**, tools, implements or materials, *see apero*, *comp. arnés* (2).
- APARINAR**, S. Am. to disclose indications of pay-ore (Lucas).
- APARTADERO**, rail. siding or turnout, *see desvío* (2); c.m. pass-by (Fr. *voie d'évitement*); widened space in canals.

**APARTADO**, (1) mech. prep. sorting, cobbing; a. á mano, hand-sorting, *syn.* *estrió*, *pepena* (3), *comp.* *monda*; (2) assay. parting of gold and silver; casa del a., parting establishment; (3) a. de correos, post-office box; (4) smelting-house.

**APARTADOR**, (1) ore-sorter, ore-picker, cobbler, *syn.* Mex. *despuntador* (1), *estriador*, *limpiador*, *partidor* (2), Mex. *pepenador* (or *pepenadora*), Mex. *quebrador* (1), equiv. Braz. *escogedor*; (2) a. de metales, smelter.

**APARTAR**, (1) mech. prep. to hand-pick, or sort; to cob or break, *see* *escojer*, *estriar*, *limpiar* (1), *pepenar*, *comp.* *mondar*; (2) a. polvillo, *see u.* *jalsontles*; (3) assay. to part; (4) a. un trén, rail. to shunt.

**APEADOR**, land-surveyor, *see* *agrimensor*, *geómetro*.

**APEADURA**, surveying, *see* *apeo* (4).

**APEAR**, (1) to brace, prop, shore; (2) to survey, *see* *medir* (2).

**APELACIÓN**, leg. appeal.

**APELMAZADO, DA**, pp. compressed.

**APEO**, (1) timbering, *see* *entibación*; a. por estacas, piling or spilling [*see u.* *labor* (3)]; (2) pulley-frame, *see* *horca* (1); (3) tubbing, *see* *encubado* (1), *u.* *cuña* (1); rueda de a., crib or curb; (4) surveying, *see* *apeadura*.

**APERADOR**, *see u.* *apero*, *capataz* (4).

**APERICADO**, *see u.* *pinta* (1).

**APERO**, "everything necessary for the running of shafts, norias, the construction of ore-sheds (*galeras*), etc., connected with underground workings" (Gamboa, 1761); the whole of the tackling, gear or implements for carrying on mining operations. The *aperador* (*comp.* *almacenista*) is the man in charge of the *apero*, and who distributes the same. *See* *aparejo* (5), *arnés* (2), *comp.* *amaños*, *avíos* (4).

**APERTURA**, *see* *abertura*; a. de bóveda, span of an arch, *see* *luz* (4).

**APETLANCADOS**, *see u.* *petlanque*.

**Á PICO**, vertically, *see* *pique* (2).

**Á PIQUE**, *see* *pique* (2).

**APIQUE**, Ant. Col. (1) shaft, *see* *pozo* (2); (2) winze, *see* *clavada*; (3) alluv. m. point where the pump is placed in working *minas de saca* (Uribe).

**APIRE**, (1) trammer, *see* *carretero* (1); (2) Peru, miner's assistant, *see* *hapire* (2).

**APIREO**, Chile, extraction of ore on men's shoulders, *see u.* *hapire* (2).

**APISONAR**, to ram with a rammer [*pisón* (1)], *syn.* *pisonear*.

**APIZARRADA**, *see u.* *arcilla*, *ulla*.

**APLANADERA**, beetle, rammer, *see* *pisón* (1).

**APLANADOR**, (1) blacksmith's flatter (Dwight); (2) ingot hammer (3) riveter.

**APLANTILLAR**, to dress stones, wood or other material according to pattern [*plantilla* (1)].

**APLASTAMIENTO**, c.m. crushing (of pillars, etc.) (Molina).

**APLOMADOS**, Michoacan, Mex., lead-coloured copper ores, or those composed of bornite, chalcocite and tetrahedrite, *syn.* *metales de labor*, *see* *cobre* (2), *comp.* *dorados*.

**APLOMAR**, to plumb or adjust with a plumb-line or plummet.

**APLOMO**, plumb-line, plummet, *see* *plomada*.

**APODERADO**, attorney, *syn.* *poder habiente*.

**APODERAR**, to grant a power of attorney.

**APOLVILLADO, DA**, *see u.* *azogue* (2), *tierras* (4).

**APOLVILLADO**, Guan. Mex., second class of rich ore from the *veta madre*, yielding about 750 ounces of silver per short ton (E. Tilmann)—first class = *polvillos y jabones*, third class = *blanco bueno*, fourth class = *granzas*.

**APOSENTO**, Col. among *guaqueros* underground room (*subterráneo*) of similar shape to that bearing the same name in habitations (Uribe).

**APOYO**, prop, stay, *see* *empenta*, *entibo* (1), *estantal* (2), *estribadero*, *puntal* (1), *quicio* (2), *tanganillo*.

**APRECIACIÓN, APRECIO**, valuation, estimation (Fr. *appréciation*).

**APRETÓN**, Asturias, Sp. name given to the sudden rush of deads obtained from the roof by blasting, and used as filling (Molina).

**APRIETA**, *piedro a.* or *piedra azul*, a variety of limestone, *see u.* *piedra*.

**APRIETANARICES**, *see u.* *careta*.

**APUNTADO**, *see u.* *cobijas* (2).

**APUNTALAR**, to prop, place props [*puntales* (1)]; *a.* *los cimientos*, to underpin (Ponce de León); *timb.* to stay, *syn. obs.* *apuntar*, *comp.* *entibar*.

**APUNTAR**, *see* *apuntalar*.

**APUNTE**, eng. rough sketch.

**APUNTILLADO**, small wedge, or pointed pieces of wood [*puntillas* (2)] or spiles driven into the wedges in wooden tubbing.

**APURADOR, RA**, adj. *see u.* *batea* and *pila* (2).

**APURADOR**, Mex. (1) one who looks for particles of ore in the waste waters (*derrames*) of amalgamation works (Gamboa, 1761); (2) a man who re-washes the ore from the *tinazas*—*apuranderas* are old women who do the same thing.

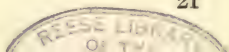
**APURADORA**, (1) *apuradoras*, blast. the long drills used for finishing a bore-hole, and after the *guías* (3) and *medias*, in Guan. Mex. they are divided into *apuradoras grandes*, *apuradoras* and *medias apuradoras*, *see* *barreno* (2); (2) in the *patio* process, a large vat, partially filled with water, in which the *bateas*, containing sediment from the bottom of the *tinazas*, are washed, *see* *pila* (2).

**APURANDERAS**, *see u.* *apurador* (2).

**APURAR**, (1) to purify metals; (2) to clean up ores; (3) to consume, exhaust.

**APURO**, cast-iron settling-pot used in the *patio* process.

**AQUILATACIÓN**, (1) com. alloying mixture; (2) assay (Ponce de León), *see* *ensaye* (1).





**AQUILATAR**, (1) to alloy ; (2) to assay precious metals, *see* **quilatar** ; (2) to weigh precious stones (Ponce de León).

**ARAÑA**, *see* *u.* **malacate** (2).

**ARANCEL**, tariff ; *a. de aduanas*, custom-house tariff ; Mex. fee-bill of mining agent.

**ARANDELA**, mech. washer, *see* **empaquetadura** (2) ; rivet-plate, collar-plate, *see* *u.* **válvula**.

**ARBITRADOR**, leg. arbitrator, *syn.* **árbitro**, **tercero**.

**ARBITRAJE**, **ARBITRAMENTE**, **ARBITRAMIENTO**, arbitration, the award of an arbitrator.

**ARBITRAR**, to arbitrate, adjudge, award, *syn.* **terciar**.

**ARBITRIO**, (1) means, expedient ; **propios y arbitrios**, ways and means ; (2) arbitration ; (3) *a. de juez*, discretionary power of a judge in cases not clearly decided by law (Velázquez) ; (4) **arbitrios**, duty or taxes imposed in provisions exposed for sale (Velázquez).

**ÁRBITRO**, arbitrator, *see* **arbitrador**.

**ÁRBOL**, (1) tree ; (2) the barrel of a windlass [**torno** (2)], etc., *syn.* **cilindro** (2), **huso**, **maza** (4) ; (3) the vertical axle of a horse-whim ; the vertical post or frame of a crane (**grúa**) ; the axle of any wheel or series of wheels, *see* **eje** (2), **guijo** (2), **pernete**, **principal** (2) ; (4) **en árbol**, said of veins which unite in depth like the branches from the trunk of a tree ; (5) Linares, Sp. rich zone or column (Moncada), *see* **clavo** (2).

**ARBOLILLO**, side of a blast-furnace (Acad.), *see* **cuba** (4).

**ARBOLLÓN**, (1) floodgate, *see* **compuerta** (2) ; (2) sluice, conduit, channel, ditch, leat, *see* **acequia**.

**ARCA**, chest or box ; *a. de agua*, reservoir ; cistern, *see* **estanque** (3).

**ARCADUZ**, (1) tube or pipe for conveying water, *see* **tubo** (1) ; (2) kind of aqueduct (**acueducto**) ; (3) each one of the earthen vessels, jars or buckets of a **noria** (1), equiv. Port. **alcatrúz**, *see* **cangilón** (2).

**ARCE**, maple-tree.

**ARCILLA**, clay, *syn.* **barro** (1), Ant. Col. **urgue** (1) ; **arcilla** may include kaolin, lithomarge, and other clay-like minerals ; for varieties *see* **calocar**, **cantara**, **caolin**, **chile** (1), **greda** (4), **lama** (3), **moya**, **leche** (2), **soleta**, **soquete** (2), **tapatinga**, **tasconia**, **terrosas**, *u.* **tierra**, **tofo**, **tosca** (1) and (4) ; for "country" altered to a clay, *see* **formación** (3) ; *a.* **apizarrada**, slaty clay ; *a.* **aluminosa**, soap-earth (Ponce de León) ; *a.* **aurífera**, gold-bearing clay ; *a.* **endurecida**, clay-stone (*syn.* **piedra arcillosa**) ; *a.* **figulina**, *a.* **para alfarería**, potter's clay (*syn.* **barro de olleros**) ; *a.* **inflamable**, rock with a bituminous base of a brown colour, mixed with ordinary clay (Guim) ; *a.* **refractoria**, fire clay ; *a.* **violácea**, lithomarge (Ponce de León).

**ARCILLOSO**, **SA**, adj. argillaceous ; **hierro arcilloso**, clay ironstone, *see* **piedra del águila** (*u.* **piedra**) ; **piedra arcillosa**, clay stone, *see* *u.* **arcilla**.

**ARCO**, mas. arch, or extended arch or vault, *see* **bóveda** (1) ; *see* **arranque** (2), **asentar** (5), **asiento** (8), **bajada** (2), **bolsón** (1) and (2), **boquete** (2), **cabeceadero** (2), **camón** (1), **cargar** (3), **cimbra** (1), **clave**, **ccdal** (4), **contraclave**,



contrafuerte (1), corvadura, cuadrado (3), dovela (1) and (2), fundamentales, intradós, luz (4), mampostería (2), provisionales, punta (5), sagita, salmer, trasdós (1); a. ciego, blind arch sometimes put in, in every 15 to 20 m., over the fundamentales to diminish the weight on the latter;

a. en descarga, Linares, Sp. *see* Fig. 8 (after Molina); a. rebajado, arch whose rise is less than half the span (Acad.).

**ARDOSIA**, Port. slate; slate quarry (ardosieira), *see* pizarral.

**ÁREA**, a square of 10 m. side, equivalent to a little more than 143 square varas (Acad.), *see* u. caballería (2).

**ARENA**, (1) sand or grit (Port. areia);

a. aurífera, a. de oro, gold-bearing sand;

a. bruja, Murc. Sp. finest sand from cleaning ditches (Acad.); a. de carboncillo,

sand burnt by the sun and almost an earth; a. de cava, fosa, hoyo, or mina, sand from any hole in the earth; a. de guija, sand taken from the guijarrales (Guim);

a. gorda, a. gruesa, coarse sand or gravel

[*see* cascajo (1)]; a. muerta, sand unmixed with earth; a. pomosa, sand formed of fragments of pumice-stone; arenas, alluv. m. auriferous sands or gravels; for arenas frías, *see* frío, ía (5); arenas acuíferas, arenas movedizas, arenas sueltas movedizas, quicksand, *see* revenidero (2); *see* meteóricos, tepetate (2); (2) metal or mineral finely reduced by nature or art (Acad.); arenas gruesas, mech. prep. all grains comprised between  $\frac{1}{2}$  and 3 mm.; arenas finas, grains less than  $\frac{1}{2}$  mm. but whose size can be recognised by touch (Ibran), *comp.* u. granza (1), and polvo.

**ARENAL** (Port. areial), a deposit of sand covering a large space, *comp.* rambla (1).

**ARENILLA**, (1) fine sand, *see* lama (4); (2) arenillas, saltpetre refined and reduced to grains as small as sand; (3) Venez. black magnetic ironsand (Dr. Foster); (4) Ant. Col. titaniferous iron ore (Uribe); (5) Zimapan, Hid. Mex., smalls from ore-sorting, *see* u. tierra (4); (6) arenillas, Mex. tailings, sand carbonates (Dwight); (7) Chile, met. copper matte mixed with slag.

**ARENISCA**, sandstone, *syn.* asperón, piedra arenisca, piedra de molleón, *see* arkosa, calón, glauconia, gres, losero, maciñó, molasa, recincho, tepetate (1).

**ARENISCO, CA, ARENOSO, SA**, adj. sandy; gravelly; gritty, arenaceous.

**ARENOSA**, freestone, *syn.* piedra arenosa.

**ARGAMASA** (Port. argamassa), mortar, *syn.* forja (3), masa (1), mezcla (1), mortero (4), *see* u. tras, *comp.* cemento, hormigón; (2) a. hidráulica, cement mortar or hydraulic cement, *see* cemento.

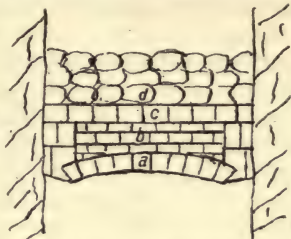


FIG. 8.—Arco en descarga (after Molina), as used in Linares, Spain. a, sandstone arch (arco); b, trasdosado or sobrecarga, of brick or concrete; c, coronación of dressed ashlar (sillarejo), sandstone; d, cortina, of granite or sandstone masonry.

**ARGAMASAR** (Port. *argamassar*), (1) to make mortar; (2) to cement with mortar.

**ARGAMASOSO, SA**, adj. *materia argamasosa*, cementing material (of rocks, etc.), *see* **cemento** (2).

**ARGIRITAS**, *marcasite* "found in silver mines" (Velázquez), *see* **marcasita**.

**ARGIROSA** (from Fr. *argyrose*), dark ruby silver, *see* **plata** (2).

**ARGOLLA**, any thick ring [**anillo** (1)], or hoop [**aro** (1)] of iron or other metal; collar (collar); staple [**cerradero** (1)]; *see* **cerco** (1).

**ARGÜE**, capstan, *see* **cabrestante**.

**ARIETE**, mech. ram—it may consist simply of a suspended beam, *see u. choque*; a. *hidráulica*, hydraulic ram.

**ARISTA**, (1) line of intersection of two planes; **bóveda de aristas**, groined arch, cross-vaulting; (2) carp. cant edge, *arris* (external angle or edge); (3) *see* **cresta** (2).

**ARKOSA**, *arkose*, a feldspathic sandstone, or one consisting of quartz and felspar, the latter in rather coarse, cleavable grains (James D. Dana); some varieties of the rock called **losero** in Guanajuato, Mex., may be referred to this type (M. Bárcena); *arkose* includes also a porphyritic quartzite (James D. Dana); *syn. metazita*, *see* **arenisca**.

**ARLEQUINES**, *see u. ópalo*.

**ARMA, ARMAS**, surv. movable arms of a hanging compass; **armas de la brújula**, frame [**armadura** (1)] of a miner's compass.

**ARMADIA**, *see* **maderada**.

**ARMADURA**, (1) frame; e.g., pulley-frame, *see* **horca** (1); frame of a crane, *see u. castillete*; timb. complete frame, *see* **bóveda** (4), **cuadro** (1), a. *en cuchillo*, *see* Fig. 9; *see* **armazón**; (2) truss, *see u. puente (1); (3) el. *armature*; (4) mech. setting, fitting; (5) Mex. "country"*

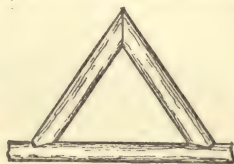


FIG. 9.—**Armadura** (1) *en cuchillo*.

(lit. setting) of metalliferous veins or other ore-deposits, *syn. armamento*, *see* **roca** (4). NOTE.—Veins, **arman**, in such and such a rock. (6) Protecting rods of a safety-lamp (**lámpara de seguridad**).

**ARMAJAL**, *see* **marjal**.

**ARMAMENTO**, *see* **armadura** (4).

**ARMAR**, mech. (1) to adjust, set, fit or mount machinery, *see* **montar**; (2) to truss or frame; (3) *see u. armadura* (5).

**ARMAZÓN**, framework, frame, e.g., pulley-frame [*see* **horca** (1)], frame of an engine (Fr. *bâti*), *see* **armadura** (1).

**ARMELLA**, staple or ring, *see* **cerradero** (1).

**ARNÉS**, (1) harness; a. *de caballo*, gear, trapping or furniture of a horse, *see* **aparejo** (2), **arreos**, **guarnición** (3); (2) **arneses**, necessary tools, utensils, furniture used in a trade, etc., *comp. aparejo* (5), **apero**.

**ARO**, (1) hoop of wood or metal (*see* *argolla*) ; aros, hoops used in hoop or bridle timbering (Ger. *Bügelzimmerung*) ; (2) iron staple, *see* *cerradero* (1) ; (3) rim of a pulley, *see u.* *anillo* (6) ; (4) *a. de sujeción*, pump. staple, gland and nuts, used in securing a set-off or off-set [*brazo* (2)], *see* *bomba* (1).

**AROEIRA**, *see u.* *candeia*.

**AROZA**, master-smelter (Ponce de León) ; foreman in ironworks or forges (Velázquez).

**ARPEO**, timb. hitch (Ponce de León), *see* *huida* (4).

**ARQUEADAS**, branches which form an arch and are again united to the vein.

**ARQUERO**, *hierro a.*, *see* *hierro* (1) cellar.

**ARRANCACLAVOS**, nail-puller ; it generally consists of a clawed crow-bar, *see* *pata* (2).

**ARRANCAR**, (1) to break ground, win or get, *syn.* *apalancar*, *derribar*, *tumbar* (1), *see* *desvenar*, *comp.* *desfrutar* ; *a. el carbón*, to break down the coal ; (2) to commence an arch or vault, *see* *arranque* (2).

**ARRANCASONDAS**, bor. tool extractor (*e.g.*, crow's-foot, bell, *bêche* or socket-bar), equiv. Ger. *Fanginstrumente*.

**ARRANCATUBOS**, bor. tube-extractor, equiv. Fr. *crochet d'arrachage*, Ger. *Röhrenheber*, *Röhrenzieher*, *see* *naveta*.

**ARRANQUE**, (1) breaking ground, winning or getting, *syn.* Peru, *ataque* (3), *derribo*, Mex. *tumbe*, equiv. Fr. *abatage*. NOTE.—It is sometimes equivalent to Fr. *dépilage*, *e.g.*, *a. según la dirección* = *dépilage en long* or *en chassant*, *a. según la inclinación* = *dépilage en travers* or *en montant* ; *see* *desmonte* (5), *despojo*, *comp.* *disfrute*. *A. mecánico*, rock-drilling by machinery ; *trabajo de a.*, working-place ; (2) *arranques*, mas. springers or reins of an arch (*arco*) or the *voussoirs* which rest on the imposts, abutments or piers ; in a rampant arch (as frequently used in mining) the upper springer = *cabeceadero* (2), and the lower one = *rafa* (1).

**ARRASTRA**, *see* *arrastre* (3).

**ARRASTRADOR**, (1) trammer, *see* *carretero* (1) ; (2) met. slag-pot puller (Dwight).

**ARRASTRAR** (to drag along the ground), (1) to haul or convey, *see* *arrastre* (1) ; (2) to unite as veins and form one ; (3) *a. el agua*, pump. to almost completely exhaust the water in a sump or working (Chism), to fork.

**ARRASTRE** (1) haulage or conveyance ; *a. interior*, underground haulage, *see u.* *rastra* (1), *transporte* ; *a. mecánico*, *see* *tracción* ; (2) slope (*talud*) or inclination of the sides of a shaft, etc. ; *tiro* (1) *de a.*, inclined shaft ; *a. de un criadero*, foot-wall or floor of an ore-deposit, *see* *bajo* (3) ; (3) *molina de a.* (often incorrectly spelt *arrastra*), a drag-mill—in Mexico *arrastres* are commonly driven by mules, elsewhere by water, or even by steam or electricity, *syn.* Nicaragua, *molinate*, *comp.* *maray* ; *a. de cuchara*, spoon-*arrastre* or *tahona*, or one driven by a rough impact-wheel, the blades of which = *cucharas* (5) ; *a. de marca*, a large *arrastre* ;



a. de mula, an arrastre worked by a mule ; a. de mano, a hand-arrastre for sampling purposes ; *see* arrollarse, asentar (4), asiento (5), barrera (3), camones, cepo (1), contraraspas, cruz, cuchara (5), espeque, *u.* fondo (4), granzón, gualdra, guiño (2), lia, maimona, peón (2), raspas, retajar, ripio (3), rodete, taco (5), taza (1), *u.* tejuelo (1), tosa, voladera.

**ARRASTRERO**, one who works an arrastre (3).

**ARRATE**, a pound of 16 ounces ; *see* arratel.

**ARRATEL**, Port. one pound weight = 1·011 lb. avoird. or 458·58 grammes, *see* arrate.

**ARRAYÁN**, myrtle, often used as a mine timber in Mexico.

**ARRAYANAL**, plantation of myrtles.

**ARREADOR**, Mex. driver of a mule-whim, etc., muleteer, *see* arriero ; a. de caballos, pony-putter (Ponce de León).

**ARREAR**, to drive horses, mules, etc.

**ARREBANAR LA CAPA**, Villanueva del Rio, Sevilla, Sp. c.m. to take down pillars of coal previously left for support (Molina), *comp.* despilar (Span. = to glean, gather).

**ARREBOL**, Mex. the jerking of a rope as a signal to miners underground (Dwight).

**ARRECIFE**, geol. ridge of rock.

**ARREOS**, horse trappings, harness, *see* arnés (1).

**ARRETRANCA**, broad crupper for mules.

**ARRIERO**, a muleteer, *see* arreador, atajador (2) or sangrero.

**ARRIMADA**, *see u.* agua (1).

**ARRIMO**, b. constr. a wall having no weight to support, idle wall, *see* muro (1).

**ARRIÑONADO**, DA, adj. botryoidal, nodular.

**ARRIOSTRADA**, timb. a support placed obliquely, a diagonal, *see* riostra.

**ARRISCADO**, *see u.* acerado.

**ARROBA**, (1) a weight of 25 lb. Spanish, or 25·361 lb. avoird., or 11·506159 k., (the a. of Castile or Madrid = 25·4025 lb. ; the a. marina = 31 or 32 lb.) ; in Brazil and Portugal = 14·6872 k. ; in Chile = 11·5032 k. ; in Cuba = 11·5059 k. ; in Paraguay = 11·34 k. ; in Argentina = 11·4838 k., in Venezuela = 11·5223 k. ; in Col. (a. granadina) = 12·50 k. ; a. inglesa = quarter (28 lb. avoird.) ; (2) a Spanish measure, a. mayor = 3·551 gals., a. menor = 2·765 gals., in Chile = 7·749 gals. (Spon).

**ARROLLAMIENTO**, aparato de a., apparatus for winding ropes, etc., as drums and bobbins, *see u.* tambor (1).

**ARROLLARSE**, said of an arrastre (3) when too much water is used, and the granza (1) accumulates in front of the voladoras (3) (B. del I. G. de M.).

**ARROYADA**, ARROYADERO, (1) *see* arroyo (2) ; (2) channel of a rivulet or arroyo (1).

**ARROYO** (Port. arroio), (1) rivulet or stream, *see* curso (2), *comp.* corrego (3) ; (2) dale or glen down which (1) runs, *syn.* arroyada (1), *comp.* barranca (2), cañada (2).



- ARROYUELO**, brooklet, streamlet, rivulet, *see* hilo (5).
- ARRUGACIÓN, ARRUGAMIENTO**, geol. crumpling, folding.
- ARRUGAR**, geol. to crumple, fold.
- ARRUGIA**, mine, *see* mina (2); according to Pliny (Hist. Nat. l. 33, c. 21) deep gold mines were called *arrugiæ*.
- ARRUGIA**, Port. small canal or pipe for the conveyance of water in mines (Elwes), *syn.* aruga.
- ARRUMBAMIENTO**, strike, *see* rumbo (3).
- ARSÉNICO**, arsenic.
- ARTEFACTOS**, manufactured articles (as plate, etc.).
- ARTESA**, vat, launder, dish for washing gold sand; a. de lavadero, buddling-dish, buddling-trough, *see* ábaco, gamella (2); a. para la lejía, lixiviation vat or trough.
- ARTESIANO, NA**, adj. artesian; pozo artesiano, artesian well.
- ARTESÓN**, trough (Ponce de León), *see* gamella (2).
- ARUGA**, *see* arrugia, Port.
- ASA**, handle of a basket, etc., *comp.* astil (1).
- ASBESTO**, (1) asbestos; a. leñoso, ligniform asbestos; a. de corcho, mountain cork, *see* amianto, palo (5); (2) asbestos-cloth, etc.
- ASCENDENTE**, *see* u. explotación.
- ASCUA**, piece of any solid and combustible substance penetrated by fire (Acad.), e.g., red-hot coal, *syn.* brasa (1).
- ASENTADO**, *see* asentar (5).
- ASENTADOR**, (1) stonemason, stonecutter, *comp.* albañil; (2) mech. prep. settler, a. de combinación, combination settler, *see* lavadero (2).
- ASENTAR**, (1) Col. alluv. m. preliminary operations in minas de saca of making the level uniform between the tonga and the point of exploitation (Uribe), *see* campana (11); (2) a. el hoyo, Col., alluv. m. to sweep off the upper layers of sand by means of water (Uribe); (3) a. planes, Col. gold-mill. to place dies or other resisting material below the stamps preliminary to crushing; (4) a. el arrastre (3), Mex. to prepare the surface of the arrastre (3) by grinding tailings (jales) thereon, until a very firm surface is obtained (S. Ramirez); (5) asentarse, mas. when an arch (arco) has acquired its position of equilibrium, se ha asentado; (6) asentarse, to settle (of broken ground), *see* asiento (9); (7) *see* sentarse.
- ASERRADERO**, (1) sawpit; (2) horse, etc., on which timber is sawn, *see* burro (2).
- ASERRADOR**, sawyer; a. de arriba, topman; a. de fosa, bottom sawyer, *syn.* Ant. Col. colero (2).
- ASERRADURA**, (1) sawing; (2) aserraduras, sawdust, *see* serrín.
- ASERRAR**, to saw, *syn.*errar.
- ASERRÍN**, sawdust, *see* serrín.
- ASERRIO**, madera de a., sawn timber
- ASFALTO**, asphaltum or asphalt, *see* betún.
- ASFIXIA**, vent. asphyxia.

**ASIENTO**, (1) *a. de liso*, timb. a joint used with round timber, formed by notching the cap, *see* Fig. 10, *see* *ajuste* (3), *comp.* *mediacaña* (3); (2) pump. seat of a valve, *see* *recubrimiento*, *u.* *válvula*; (3) Mex. in the patio process, the metalliferous schlich or concentrates in panning, *see* *u.* *tentadura* (1); (4) *a. de minas*, *a. mineral*, mineral region, *see* *real* (1); (5) lower surface of the muller of an *arrastre* (3), *see* *u.* *voladora* (3); (6) sediment; *tanque de a.*, settling-tank, *see* *tanque*; (7) *tierras de a.*, Calamahi, L. Cal., Mex. fine sand in which fine gold is found, with a maximum thickness of 0.30 m.: it is found below a conglomerate with a lime cement up to 2 m. thick, which latter occurs below a cap of vegetable earth 0.25 to 0.55 m. thick. Below the *tierras de a.* are the *cascajos* (5) and (6)—in the *cascajo blando* the gold penetrates to 30 c.m. (J. M. Ramos); (8) bed of a furnace [*horno* (2)], of an arch (*arco*), bedding of a boiler [*caldera* (2)]; *a. de los durmientes*, rail. bed; *a. de una máquina*, bedplate, *see* *cama* (4); (9) settling of broken ground (Fr. *tassement*), *see* *asentar* (6); b. constr. settling; (10) *a. de vía*, rail. laying of rails; (11) *madre de a.*, timb. bearer, *see* *u.* *cuadro* (1); (12) *asientos*, met. bottoms (copper-smelting); (13) timb. hitch, *see* *huida* (1); (14) site of a building or town.

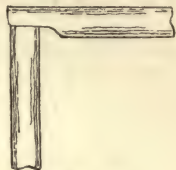


FIG. 10.  
Asiento de liso.

**ASNA**, *see* *u.* *asnado*.

**ASNADO**, Almaden, Sp. large piece of timber with which the sides of the mine are secured—a large stull (*estemple*) (*asnas*, Span. = rafters of a house), *see* *entibación*.

**ASOMBRARSE**, *a. un filón*, Ant. Col. to become flatter (of a vein), or to approach a *veta de sombra* or *manta* in inclination; “Un mismo filón puede tener partes en que sea de cajón, ó de resbalón, ó en que se asombra” (F. de P. Muñoz).

**ASOMO**, *see* *afloramiento*.

**ASPA**, (1) gold-mill. tappet, *see* *leva* (2); (2) *medias aspas*, timb. laths (Chalon), *see* *pilote* (2); (3) La Mancha, Sp. two timbers in the form of a cross, which, with the *peón* (3), moves the wheel of a *noria* (1); (4) wing of a windmill [*molina* (1) *de viento*]; (5) horizontal float of a water-wheel, *see* *u.* *tahona*; (6) arms [*brazo* (1)] of a bobbin; (7) Peru, intersection or junction of two veins (Dwight), *see* *intersección*.

**ASPEREZA**, **ASPERIDAD**, vent. roughness of the sides of a gallery or shaft, *syn.* *rugosidad*.

**ASPERÓN**, (1) grindstone, *see* *muela* (4); (2) flagstone, *see* *cobija* (2), *losa*; geol. sandstone (*arenisca*), grit; *a. carbonífera*, coal grit, carboniferous sandstone or millstone grit.

**ASPIRACIÓN**, suction, *syn.* *succión*; *altura de a.*, height of suction; *tubo de a.*, suction-pipe; *tubería de a.*, set of suction-pipes; *válvula de a.*, suction-valve.

**ASPIRADOR**, vent. aspirator, exhauster.

- ASPIRANTE**, pump. wind-bore ; for snore-piece, *see u. alcachofa* ; *see u. bomba* (1).
- ASTA**, (1) mech. shaft, spindle, *see eje* (2) ; (2) mas. curb-stone ; (3) **a. de bomba**, pump. rod or spear, *see tirante* (1) ; (4) **a. de bandera**, flag-staff.
- ASTERÍA**, (1) asteria or asteriated sapphire or star-stone, *see zafiro* (1) ; (2) cat's-eye, a variety of chalcedony (*calcedonia*).
- ASTIAL**, *see hastial*.
- ASTIL**, (1) handle or helve, *syn. cabo* (1), *mango* (1), *manija*, *manubrio* (1), *see maceta* (1), *comp. asa* ; (2) **a. de balanza**, beam of a balance, of a steelyard, etc., *see brazo* (1).
- ASTILLA**, (1) chip of wood, splinter of timber ; **a. de madera**, batten or scantling ; **astillas grandes**, *see rachas* ; **astillas**, Col. split polings ; (2) **astillas**, Province of Pataz, Peru, particles of gold sometimes met with in the mud accumulating in the gutters of the streets after heavy rains, *see oro* ; (3) irregular fragment of flint, etc., *comp. lasca*.
- ASTILLERO**, Mex. place in the forest where firewood is cut (*Acad.*) ; open forest ; pastures for mules, etc.
- ASTILLOSA**, *see u. pizarra*.
- ATABACADO**, **cobre a.**, Asientos, Aguas Calientes, Mex. copper ore of the colour of tobacco (S. Ramirez).
- ATACADERA**, blast. tamping-bar, rammer, stemmer or beater, *syn. atacador*, **taco** (3), Ant. Col. **taqueador** (2), equiv. Fr. *bourroir*, Ger. *Stampfer* ; for **a. de lodar**, of Almaden, Sp., *see Fig. 11* (after Moncada).
- ATACADOR**, *see atacadera*.
- ATACDURA**, blast. tamping, *see ataque* (1).
- ATACAMITA**, Atacama and Antofagasta, Chile, name given to various combinations of cupric oxide and cupreous and cupric chloride of copper. According to Dana *atacamite* is an oxychloride of copper [ $\text{CuCl}_2 + 3\text{CuO}_2\text{H}_2$ ], *syn. cobre salino*.
- ATACAR**, (1) blast. to tamp ; (2) Mex. to express mercury from a canvas bag by beating it with a stick (Dwight).
- ATAGUÍA**, hydr. eng. dam of watertight material, coffer-dam, *see u. represa* (1).
- ATAHONA**, *see tahona*.
- ATAHONERO**, *see tahonero*.
- ATAJADERO**, sluice-gate, *see compuerta* (2).
- ATAJADOR**, Mex. (1) boy (*mozo*) who brings the mules or horses at the change of a shift for the *tahonas*, mills and pumps (Gamboa, 1761) ; (2) mule-driver who prepares the meals for the rest on the road, *see sangrero*.
- ATAJE**, Ant. Col., alluv. m. a natural obstacle which obliges the water to change its direction or velocity, forming an *encierro* or otherwise (Uribe).
- ATAJO**, short cut ; trail.



FIG. 11.  
Atacadera de lodar, as used at Almaden Spain.



**ATANOR**, water-tube, *see* tubo (1).

**ATAQUE**, (1) tamping, *syn.* atacadura, taco (2); (2) ataques, rubbish, deads, *see* desecho (3), *u.* retaque. **NOTE**.—Attaques in Tunisian Atlas = diggings. (3) Peru, breaking ground, *see* arranque (1).

**ATARJEA**, (1) brick covering to protect pipes, etc.; (2) c.m. undercut, *see* regadura (2).

**ATARRAJAR**, *see* aterrajar.

**ATARUGAR**, (1) carp. to secure a joint with wedges, etc.; (2) mech. to plug or stop up, *see* tarugo.

**ATECAS**, Mex. men who empty water from the bottom workings [planes (1)] of a mine in botas, in order that it can be pumped out of the shaft (Gamboa, 1761), *see* achicador, achicar, desagüe (2). **NOTE**.—In Spain ateca is old name for espuerta or two-handled basket made of esparto, palm, etc.

**ATENOR**, *see* aludel.

**ATEPOZTELADO**, *see u.* tepostel (2).

**ATERRAJAR**, **ATARRAJAR**, to cut the thread of a screw; to tap with the die.

**ATERRAMIENTO**, alluvium (Ponce de León), *see* aluvión.

**ATERRAR**, **ATERRERAR**, to dump or tip, *see* vaciar.

**ATESADOR**, mech. stretcher, line-tightener, tensor, take-up. Brace-pin (Velázquez), *see u.* rodillo, tensor.

**ATIERRE**, Mex. attle or waste rocks [desecho (3)] resulting from a cave or run of ground [hundimiento (1)] (Acad.); atierres, deads [tierras (5)] which impede the use of labour, and which must be taken out and thrown on the dumps [terreros (3)] (Gamboa, 1761).

**ATÍNCAR**, tincal—refined tincal = borax of commerce (bórax).

**ATINCONAR**, to secure the walls provisionally with stulls (estemples) in order to avoid "runs" [hundimientos (1)] (Acad.).

**ATIVACIÓN**, c.m. stowing or packing, *see* relleno (2).

**ATIVADO**, c.m. waste or goaf, *see* relleno (3).

**ATIVAR**, c.m. to stow or pack, *see* rellenar.

**ATIZ**, **ATICES**, Ant. Col. timb. poles for lagging, generally from 3 to 5 inches in diameter, *see* revestimiento.

**ATIZADERO**, coal-mouth of a blast-furnace (Ponce de León), *see* horno (2).

**ATIZADOR**, (1) poker (*see* hurgón); stoke-bar; (2) furnace-man or stoker, *see* fogonero; (3) Mex. dresser of magistral (G. F. Lyon, 1828); (4) Col. battery-feeder, etc.; (5) wick-raiser of a lamp (lámpara).

**ATOLLADERO**, Peru, swamp (Tschudi), *see* pantano (1).

**ATORAR**, Cartagena, Sp. to pack with attle (atoro).

**ATORNILLADOR**, screw-wrench.

**ATORNILLAR**, to screw, to fasten with screws.

**ATORO**, Sierra de Cartagena, Sp. attle-packing (Molina), *see* relleno (3).

**ATRACADO**, attle-packing, *see* relleno (3).



**ATRANCAR**, Mex. blast. to drill a hole at a very acute angle (Dwight), *see* **barrenar** (1).

**ATRAVESADA**, *see* **atravesado**.

**ATRAVESADO**, DA, adj. labor **atravesada**, transverse working or cross-cut method.

**ATRAVESADO** (or **atravesada**), (1) timb. sole-piece, *see* **solera** (3); (2) timb. dividing-piece of a shaft-frame, *syn.* **Pachuca**, Hid. Mex., **partido** (4) (solid division), Zac. Mex. **pasamano** (3), **tabique**, **travesaño** (3), **traviesa** (2), equiv. Fr. *traverse*, Ger. **Einstrich**; (3) *see* **cruzada** (1).

**ATRAVESANO**, *see* **travesaño**.

**ATRAVESANTES**, *see* **cruzantes**.

**ATRAVESAR**, a. **un filón**, to cut across a lode, *see* **cruzar**.

**ATRICIÓN**, attrition, rubbing, abrasion, *syn.* **frotación** (2), (geol.) **rozamiento** (2).

**ATUFAMIENTO**, stifling an underground fire by damming, by carbonic acid gas or other means, *syn.* **ahogo**.

**ATURDIR**, Mex. to subdivide, mechanically, the quicksilver in a **torta** so as to quicken its action upon the mineral treated (Dwight).

**ATUTÍA**, tutty or oxide of zinc mixed with protoxide of iron, oxide of lead, cadmium, etc. formed as a crust on the chimneys of furnaces.

**AUQUIS**, Peru, rock-drillers in mines (Dwight), *comp.* **barretero**.

**AUMENTO**, *see* **hinchazón**.

**AUREOLA AZUL**, vent. the cap, show or blue "top," halo or aureola of the flame of a candle or lamp in an atmosphere containing fire-damp.

**AURÍFERO**, RA, adj. auriferous.

**AUTOS**, *see* **expediente**.

**AUXILIARES**, *see* **u. labor** (1).

**AVALUAR**, to appraise, value, estimate.

**AVALUO**, valuation, appraisal.

**AVANCE**, mech. lead, lap (**Ponce de León**); a. **del cilindro**, cylinder head (Fr. *tête du cylindre*); labor **en a.**, *see* **u. labor** (3).

**AVANTRÉN** (limbers of a gun-carriage), blast. the four small wheels of a Dubois-François drill-carriage, to enable it to be pushed over curves of small radius.

**AVANZAR**, to drive, *syn.* **abrir** (1), Mex. **colar** (1), **dar cuele** (1).

**AVELLANADO**, counter-sinking for bolts, rivets, etc.

**AVELLANADOR**, countersink-bit, rose-bit; rimer.

**AVELLANAR**, to countersink.

**AVENA**, oats.

**AVENADO**, *see* **u. campanil** and **vena** (2).

**AVENIDAS**, *see* **u. verano**.

**AVENTADERO**, (1) Ant. Col. a placer higher than a **sabana** (2) or **sobresabana**: "Estas minas son como botaderos ó embestidores de los rios, para servirnos de los expresiones originales con que las designan" (Fray Pedro Simon, 1625), *comp.* **hucica**; (2) Peru, name given by the country people to an auriferous deposit or placer, *see* **placer**: according

to Lock "a slide of loose ground containing alluvial gold" ; (3) **aventaderos**, Arg. shallow placers of Quaternary age including (a) placers *in loco* formed by the degradation in place of the vein material, (b) bottoms of present valleys and beds of rivers, (c) abandoned beds of actual rivers in the drift-terraces of the valleys (V. Novarese), *comp. venero* (3).

**AVENTADOR**, (1) pump. leather valve in upper part of suction-tube (Acad.), corresponds to clack-valve (**chapeleta**) of Cornish lift (2) blower, fan ; **a. de agua**, trompe, *see trompa* ; (3) *see placer*.

**AVENTURERO**, adventurer, *see u. socavón* (1).

**AVETADO, DA**, adj. veined, seamed.

**AVIADO, DA**, pp. of **aviar**, *see u. aviador*.

**AVIADO**, Span. Am. one supplied with money or other articles to work a silver-mine (Velázquez).

**AVIADOR, RA**, adj. *see aviadoras*.

**AVIADOR**, Span. Am. (1) one who pays the cost of mine workings (Acad.) ; (2) a person who "habilitates" a mine, *i.e.*, who furnishes the money for working it by a contract with the proprietors (R. E. Chism), *syn. habilitador*.

**AVIADORAS**, Span. Am. **barras a.**, shares paying assessment ; **barras aviadas**, or **viudas**, shares paying no assessment, limited liability shares.

**AVIAR**, Span. Am. to lend money or effects for working a mine.

**AVINGE**, Ant. Col. a tree which yields a very strong wood for construction (Uribe).

**AVÍO** (1) preparation, provision ; (2) Mex. advances originally made, at the discretion of the Tribunal, to mining proprietors, who required funds in order to complete their works (Ward), *see also u. rescatador* (1) ; **contrato de a.**, habilitation [**habilitación** (1)] or funds advanced for the working of mines ; **banco de avíos**, a bank which advances funds for the working of mines ; (3) hereditary lease ; (4) **avíos**, mine implements, *but see u. partido* (3) ; mine materials, as powder, fuse, candles, etc., *comp. apero*.

**AVISADOR**, a machine for giving notice, *see indicador*.

**AVISAR**, rail. to signal.

**AVISO**, (1) rail. signal ; **a. de alarma de Shaw**, vent. Shaw's signalling apparatus ; (2) Mex. announcement on the Bulletin Board, outside the Mining Agency, of applications for claims, etc. ; Col. notice of denouncement given before an Alcalde.

**AYATE**, Mex. thin fabric made of the thread of the agave (Acad.) ; coarse fibre-cloth for carrying ore, dirt, etc. (Dwight).

**AYEMADO**, *see u. pinta* (1).

**AYUDA**, (1) **metal de a.**, ore containing lead used to assist the smelting of other ores ; ferruginous ores are sometimes so named, *syn. metal de jugo*, *see fundente, u. soroche* (2) ; (2) Mex. a small bonus to tributors who fail to make expenses (Dwight).

**AYUDANTE**, assistant (Fr. *aide*) ; **a. de fundición**, master smelter ; **primer a.**, surv. follower, **segundo a.**, surv. leader (Ponce de León) ; Ant. Col. assistant millman, *see* **molinero**.

**AYUNQUE**, anvil, *see* **yunque**.

**AYUSTAR**, to splice a rope, *see* **empatar** (2).

**AYUSTE**, splicing (of a rope), *see* **empate** (2).

**AZABACHE** (Port. **azeviche**), jet, *syn.* **ámbar** (2) **negro**, *see* **u. ulla**.

**AZADA** (Port. **enxada**), (1) spade, *syn.*

**azadón** (2), Cuba, **guataca**, Aragón, Sp.

**jada** (**jadiar**, to dig up with a spade),

*comp.* **pala** (1) ; (2) hoe, *see* **azadón** (1).

**AZADÓN**, (1) hoe, *syn.* **azada** (2), *see* **coa**,

**endchada**, **lengua** (8) ; (2) spade, *see*

**azada** (1) ; (3) scraping shovel or (Derb.)

scraper, *see* Fig. 12 (after Moncada), *syn.*

**batidor** (1), *equiv.* Fr. **grattoir**, Ger.

Kratze—the chankol of Sumatra is similar, *see* **legón**, *comp.* **mecapal** (2), **raedera**, **rastro** ; (4) pickaxe, *see* **zapapico**.

**AZANCA**, subterranean spring (Acad.), *see* **manantial**.

**AZARCÓN** (Port. **azarcão**), red lead, *syn.* **minio** ; **a. nativo**, minium.

**AZIMUT**, azimuth-bearing, *see also* **u. cenital**, **dirección** (2).

**AZOGADO**, Mex. poisoned by mercury (Dwight).

**AZOGAMIENTO**, (1) overlaying with quicksilver ; (2) slaking lime ; (3) mercurial poisoning.

**AZOGUE** (Port. **azougue**), (1) quicksilver or mercury, *syn.* **a. en caldo**, **mercurio**, *see* **desecho** (1), **empleo**, **lista** (1) ; (2) ore amenable to amalgamation, free-milling ore ; **a. apolvillado**, **a. común** or **a. ordinario**, **a. razonable**, very good, ordinary and middling ore for amalgamation respectively ; mineral or **metal de a.**, ore capable of being amalgamated ; **azogues**, Pachuca, Hid. Mex. second-class ore separated in the mine, *see* **calichal** ; Sinaloa, Mex. silver ores chiefly composed of sulphide of silver and **plata verde**, which, accompanied by silicate of copper, gives a green colour to the ore (**metal verde**), in a quartz matrix (A. Moreno) ; Batopilas, Chih. Mex. ore containing visible silver.

**AZOGUERÍA**, (1) amalgamating works, *syn.* **hacienda de beneficio** ; (2) Mex. the room set apart for separating amalgam from the active mercury, weighing the **pella** (2), and forming it into **cuerpos** (1) (G. F. Lyon, 1828) ; (3) amalgamation process.

**AZOGUERO**, (1) Mex. the amalgamator, or person who superintends the process of amalgamation, *syn.* **beneficiador** ; (2) Sp. a dealer in quicksilver.

**AZOLVAMIENTO**, *see* **azolvo**.

**AZOLVARSE**, (1) to become obstructed (of pump-tubes, etc.) ; (2) Almaden, Sp. miner's term, meaning to be out of one's wits (Velez de Aragón, *Diccionario*, 1891).

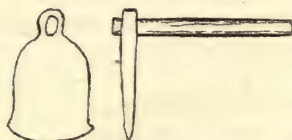


FIG. 12.—Azadón (3) (after Moncada).



**AZOLVO**, the blocking of pumps or water-pipes, *syn.* **azolvamiento** ; azolvos, obstructions in mine galleries, etc., produced by water.

**AZUCAR** (sugar), Ant. Col. a soft white granular rock in which calcite predominates, forming the gangue [matrix (1)] of native gold (Uribe).

**AZUCARADO**, *see u.* **guija** (2).

**AZUD**, (1) dam with a sluice or flood-gate, *see* **presa** (1) ; (2) Persian wheel, *see* **azuda**.

**AZUDA**, Persian water-wheel, *syn.* **azud** (2), **zua**, **zuda**, *comp.* **noria** (1).

**AZUELA**, adze, *syn.* Mex. **hachazuela**, *see* **achaparera**.

**AZUFRADO**, (1) Ant. Col. yellow ochre found in the veins, *see u.* **ocre** ; (2) **azufrados**, Peru, sulphide ores (Dwight), *see* **azufrón** (2).

**AZUFRAL**, *geol.* **solfatara**.

**AZUFRE** (Port. **enxofre**), (1) sulphur or brimstone ; **a. nativo**, **a. vivo**, native sulphur, *see* **máchays** ; (2) Ant. Col. a yellow stone of great hardness, frequently found in gold placers ; (3) **pedra a.**, **metal de a.**, sulphur rock ; (4) **aceite de a.**, oil of vitriol, *see* **aceite** (4).

**AZUFRÓN**, (1) pyritic mineral in a pulverulent condition (*Acad.*) ; (2) **azufrones**, Mex. sulphide ores, *see* **azufrado** (2).

**AZUL**, *adj.* blue, for **pedra a.**, *see u.* **pedra** ; for **plata a.** *see u.* **plata** (2).

**AZUL**, (1) lapis lazuli ; (2) **a. acerado**, Zac. Mex. **stephanite**, *see u.* **plata** (2) ; (3) **a. plomillosa**, Zac. Mex. **argentite**, *syn.* Guanajuato, Mex. **molonque relumbroso** (Dahlgren), *see u.* **liga** and **plata** (2) ; (4) **azules**, Sierra de Cartagena, Sp. a deposit (bed) occurring in a slatey formation, containing disseminated galena and impregnated with silicate of iron, which gives it a greenish blue colour (Molina), *see* **galena**, *u.* **manto** (1) and **pizarra** ; (5) **azules**, Mex. sulphide ores (silver-bearing), *comp.* **azulaque** (4).

**AZULADO**, **metal a.**, **selbite**, *see u.* **metal** (3) and **plata azul de Catorce**.

**AZULAQUE**, (1) bitumen, *see* **zulaque** ; (2) Zacualpan, Mex. **argentite**, *see u.* **plata** (2) ; (3) **a. y cardenilla**, Guerrero, Mex. copper ores of blue and green colours, rich in silver (S. Ramirez), *see* **cobre** (2), **plata** (2) ; (4) **azulaques**, Fresnillo, Zac. Mex. ore derived from the country which, for some distance from the veins, is impregnated with fine particles of iron pyrites, **argentite**, silver and chloride of silver (Burkart), *see* **plata** (2), *comp.* **azules** (5), **negro** (6).

**AZURRONADO**, Tlalpujahua, Mich. Mex. cubical iron pyrites containing some silver (S. Ramirez), *see* **pirita**, **plata** (2).

**AZUTERO**, sluice-master.

**BACILAR**, *adj.* fibrous texture (of minerals).

**BACISCO**, *see* **vacisco**.

**BAETA**, *see u.* **bayeta**.

**BAGAZO**, Mex. (1) *mech. prep.* waste from hand-jigging (Dwight) ; (2) *blast. mud* from drill-hole (Dwight).

**BAHIAS**, *see* **cincorá**.



- BAJA**, (1) com. fall or diminution of price ; depreciation ; (2) *b.* (= bajada) de metales, Peru, lowering of ores from mine to mill (Dwight) ; (3) *see* bajo (3).
- BAJADA**, (1) descent, *see* baja (2) ; ladder-way ; *b. y subida*, descent and ascent, *see* amigo, barzón, caballito (2), caballo (3), fiador (3), honda ; (2) inclination of an arch (Velázquez), *see* arco.
- BAJAR**, (1) to descend ; (2) to reduce the price, *see* baja (1).
- BAJÍO**, (1) a shoal, sandbank, shallow or flat (Velázquez), *syn.* bajo (4) ; (2) bajíos, S. Am. ravine (Ponce de León), *see* barranca (2).
- BAJO**, *JA*, adj. low ; bajo de ley, base (of metals) or low grade (of ores) ; minas bajas, Ant. Col. alluv. m. low-lying mines which have to be unwatered by artificial means ; generally deposits forming the present beds of rivers, *syn.* minas de labor or de saca (4), *comp.* minas altas, *u.* alto, *ta*.
- BAJO**, (1) lower part of a vein, bed or mine, *comp.* alto (1) ; (2) Mex. in the patio process, the base on which the platillo (1) rests ; (3) Mex. (= baja), footwall of a lode, or footwall side of an inclined shaft, *syn.* arrastre (2), muro (2), piso (3), Villanueva del Rio, Sevilla, Sp. solería (Molina), yacente ; equiv. Port. lapa, Fr. mur, Ger. Liegende, *see* u. respaldo, *comp.* alta (1) ; (4) shoal or sandbank, *see* bajío (1).
- BALAJ**, **BALAJE**, balas-ruby (a rose-red variety of spinel), *see* rubí (1).
- BALANCE**, com. balance of accounts, balance-sheet.
- BALANCÍN**, bor. spring-pole, mech. walking-beam or working-beam (*syn.* *b. de vaivén*—Fr. balancier) ; *b. de contrapeso*, pump. balance-bob, *see* contrabalanazón ; *b. angular*, L-bob or a V- or angle-bob ; any small lever or balance ; *see* baos, volante (4).
- BALANZA**, (1) *b. seca* (Fr. balance-sèche), balance used for lowering timber, stores, or ore ; *b. de agua*, *b. hidráulica* (Fr. balance hydraulique) water-balance for raising stones, slate, etc. ; (2) Espíel, Cordoba, Sp. a winze or staple called so because a balance is used therein, *see* clavada ; (3) small scales ; *b. para ensayos*, assay-balance, *see* cruz (7).
- BALANZÓN**, (1) Mex. pump. balance-bob, *see* contrabalanazón ; (2) copper pan used by silversmiths (Velázquez).
- BALASTAR**, rail. to ballast, *see* afirmar.
- BALASTO** (from Engl.) transp. ballast ; una tongada de *b.*, a layer of ballast ; *see* cascajo (11), casquijo (2), lastre (2), ripio (2).
- BALATA**, Venez. a hard wood used for mining purposes (B. B. Ashmore and C. Seale).
- BALATE**, (1) a boundary-mark (heap of stones, etc.), *see* mojón (1) ; (2) a border of a trench or ditch (acequia).
- BALCONCILLO**, *see* descanso (2).
- BALDE**, wooden pail or bucket for raising water from wells, etc. (Guim), *see* cubo (1), herrada ; Bilbao, Sp. bucket used in ropeways ; *syn.* Mex. canastillo, Cartagena, Sp. vagoneta.
- BALDEAR**, to bail (bale) with buckets (baldes), *comp.* achicar.
- BALDÍOS**, *see* u. terreno (1).

- BALDOSA**, (1) a fine square tile, *see* **cobija** (1); (2) flat paving-stone, *comp.* **cobija** (2).
- BALSA**, (1) pool, pool of stagnant water in a mine, lake, *see* **charco** (1), **ciénaga** (2), **era**, **estanque** (1), **tanque** (2); (2) raft used for conveying persons or goods across or down rivers, *comp.* **maderada**; (3) Mex. movable cradle or platform used in timbering shafts, *syn.* **tabladillo** (1) **móvil**, **Pachuca**, **taranguela** (1), *comp.* **descanso** (3); (4) **b. de clarificación**, **b. de depósito**, settling-tank, *see u.* **estanque** (3).
- BALSAR**, Span. Am. marshy piece of ground with some brambles (Acad.), *see* **pantano** (1).
- BALSEAR**, to cross rivers on floats or rafts [**balsas** (2)].
- BALSERO**, ferryman, *see* **balsa** (2).
- BALTROTE**, *see* **bantrote**.
- BANASTA**, a large basket generally made of osier twigs, and long in shape (Guim), *see* **canasta**.
- BANASTO**, large round basket (**canasta**); 12 **banastos** = 1 *carga* of charcoal.
- BANCA**, (1) bench, *see* **banco** (1); (2) *see* **banco** (2); (3) Phil. a kind of boat or canoe (*see* Acad.); (4) com. brokerage (**corretaje**).
- BANCADA**, stope, *see* **escalón** (2).
- BANCO**, (1) bench, carpenter's bench, *syn.* **banca** (1); **b. de acepillar**, planing-bench; (2) solid bed [**capa** (1)] of mineral having two faces exposed, one (the upper) horizontal, the other vertical, bench, underhand stope, *syn.* **Linares** and **Marbella**, Sp. **antepecho** (Acad.), *comp.* **testero** (3); for **escalón de b.**, *see u.* **grada** (2); **labor en bancos**, **trabajo de banca** (2), or **de banco**, underhand stoping; **b. invertido**, *see* **testera** (3); **b. recto**, *see u.* **recto**, *see* **rebajo**; (3) **b. de piedra**, quarr. any one bed of stone, a bed, seam or layer, geol. any thick bed [*comp.* **lecho** (2)], *syn.* **capa gruesa**, **manto** (1), *see* **capa** (1), **nivel** (4) and (5), *u.* **taco** (5); (4) **b. de tierra**, ground-sill, mud-sill, *see* **muertos**; (5) Mex. hard rock which throws and narrows a vein, or makes it take another direction (Gamboa, 1761), *see* **dique** (5); horse [**caballo** (5)], or cross-course [**crucero** (2)], (Dwight); (6) Mex. crucible of a blast-furnace, *see* **crisol** (2); (7) **b. de herrar**, Mex. horse-shoeing shop (Dwight); (8) row of stones (Ponce de León), *see* **camada** (2); (9) **bancos plateros**, Sinaloa, Mex. argentiferous pyrites, *see* **pirita**, **plata** (2); (10) **b. de arena**, sandbank; **b. de río**, sandbank in a river, bar, *see* **barra** (8).
- BANDA**, (1) strap or belt; (2) *see* **cinta** (1); (3) tire of a wheel, *see* **llanta** (1); (4) bank (of a river), *see* **ribera**; (5) *see* **zona** (2).
- BANDEADA**, *see* **cinteada**.
- BANDERA**, surv. flag, *syn.* **banderola**, *see* **asta** (4).
- BANDERILLA**, blast. paper cone kept in position by a piece of clay, used to mark position of drill-holes.
- BANDEROLA**, surv. flag, *see* **bandera**.

**BAÑO**, (1) Mex. in the *patio* process, the last portion of mercury sometimes added to a *torta* when the amalgam is very dry (*seca*), or when there is much flouring (*desecho*) of the mercury; (2) *abre el b.*, Mex. in cupellation, when the lead begins to melt in the furnace (Ramirez); (3) *baños*, Mex. water collected in old works, etc., *syn.* *depósitos* (4), *comp.* *estanque* (4); (4) *b. de arena*, chem. sand-bath.

**BANQUE**, underhand stoping, *see u. banco* (2).

**BANQUEAR**, Ant. Col. to level earth for building purposes, for a road or ditch, or for depositing ore, etc.

**BANQUEO**, (1) Ant. Col. ground levelled for building purposes, for depositing ore, etc., *comp.* *echadero*; (2) Serrate de Lorca sulphur mines, Sp. breaking down a portion of the floor, which is solid, in order to gain the necessary height (Molina); (3) underhand stoping, *see u. banco* (1).



FIG. 13.—*Banqueta* (2)  
used in quarrying.

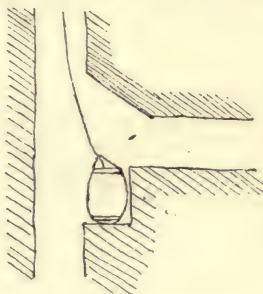


FIG. 14.—*Banqueta* (2)  
for kibble.

**BANQUETA**, (1) a small bed or bench, *see banco* (2); (2) bench or flat surface, *e.g.*, quarr., *see* Fig. 13, bench or resting-place for the kibble, *see* Fig. 14, step of an underhand stope [*meseta* (3)], bed or support of a wedging-curb [*rodete* (3)] of masonry tower constructed on cutting-ring [*corona* (2)], etc.

**BANQUETE**, *see u. meter*.

**BANQUILLO**, (1) *banquillos*, Mex. in the *patio* process, the stools on which the bars of lead bullion (*marquetas*) are placed (G. F. Lyon, 1828); (2) a small bed, *see banco* (2).

**BANTROTE**, timb. a long head-piece, wall-piece or lid (*strap* of Australians), serving for two or more stemples (*estemples*), *syn.* *baltrote*, *see galápago* (2).

**BAOS**, *b. de la máquina*, engine-beam (Elwes), *see balancín*.

**BARANDA**, **BARANDILLA**, railing of timber, iron, etc.; fencing round shafts, etc., railing round platform of a man-engine (*escala móvil*), etc., *see pasamano* (1).

**BARBA** (beard), Mex. fire-bridge (Dwight), *see puente* (2).



**BARBACOAS**, Peru, zigzag roads made with stulls (*estemples*) bearing on the walls of the deposit; on these are longitudinal timbers of less diameter on which small waste is put to form the *piso* (Santolalla).

“Estas barbacos avanzan con los frentes de las galerías y comunican entre si, por maderos dispuestos según los peldaños de una escalera, que se apoyan en les cajas colocados á golpe de comba” (Santolalla).

**BARCAL**, Huelva, Sp. flat box strengthened with iron hoops, used instead of *espuerta* (Acad.); the *barcal* is no longer used in any mine in Spain (Molina).

**BARCAZA**, **BARCAZO**, large boat, barge, lighter, *see barco*, *charlana*.

**BARCO**, boat or barge; this and *barcazo* (*barcaza*) are sometimes used in canal-levels.

**BARQUEAR**, Ant. Col. alluv. m. to extract as much of the pay-dirt as possible, without method, leaving the overburden untouched, *syn.* Panamá, *burbuscar* or *gurguscar*, *mazamorrrear*.

**BARQUEO**, Ant. Col. the extraction of the pay-dirt by crude means, *syn.* Panamá, *burbusco*, *gurgusco*, *mazamorreo*, *see barequear*.

**BARQUERO**, Ant. Col. an itinerant and empirical stream-washer, who occupies himself in crude methods of alluvial washing, *syn.* Panamá, *burbusero* or *gurguro*, *mazamorrero*, *see barequear*, *lavador* (1).

**BARILLA**, *see barrilla*; for *piedro de b.*, *see u. piedra*.

**BARITEL**, *see malacate* (1).

**BARITINA**, barytes or heavy spar, *see espejuelo* (9), *guijo* (3).

**BARNIZ**, (1) varnish, *b. de copal*, copal varnish; (2) Mex. mineral coating a joint, *syn. embije*, *embijete*.

**BARQUÍN**, **BARQUINERA**, large bellows used in ironworks (*ferrerías*) (Acad.), *see fuelle* (1).

**BARQUINA**, S. Am. large furnace (Ponce de León), *see horno* (2).

**BARQUINERA**, *see barquín*.

**BARRA**, (1) crow or crowbar, *see alavanca*, *barrón*, *descalzador*; *b.*

*azuela*, bar with a chisel-bit; *b. de punta* or

*b. pica*, bar with a diamond-shaped point;

*b. de uña*, claw-bar for spikes (Dwight) (*syn.*

Mex. *chiva*); *barras*, Col. iron bars used in

gold-washing; (2) quarr. jumper, equiv. Fr.

*barre à mine*, Ger. *Steinbohrer*; the method

of boring with the jumper is known as *á la*

*barra*, *á la vizcaína*, or *barreno* (3) *de viento*,

*see u. barrena* (1); (3) a bar or ingot of

gold, silver, copper, etc., *see changote*, *u.*

*hierro* (1), *lingote*, *riel* (1), metal en *barras*,

bullion; *plata en barra*, silver bullion, *comp.*

*oroche* (1), *u. oro*, *piña* (3); *barra de plata*,

Mex. in the *patio* process, a silver bar weighing

135 marks or 1080 ounces (Lyon, 1828) or 75

lb. (Dahlgren), *syn. plata de patio*, *plata de*

*pie*, *see ladrillera* (2); (4) mech. rod or bar,

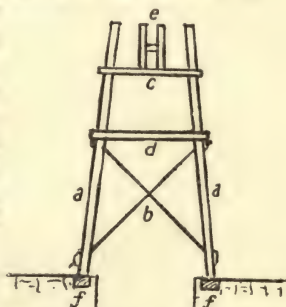


FIG. 15.—*Barra* (9) (after Moncada). *a*, *pies derechos* (montantes); *b*, *cruz de San Andrés*; *c*, *prensa* (tirante); *d*, *barra* (tirante); *e*, *pies derechos cortos* (pilaretas); *f*, *mueritos*.



*e.g.*, boring-rod, *see* **varilla** (1) *and* *u.* **vástago**; **b. de connexion**, connecting-rod, *see* **biela** (1); **b. de echar** or **de andar**, starting-bar; **b. de émbolo**, piston-rod; **barras de almenadas**, bars used in the construction of reverberatory furnaces; **barras de asiento**, foundation-rods (Fr. **barres de fondation**); (5) Mex. orig. the twenty-fourth part of a mine (*comp.* **acciones**); for **barras viudas** or **aviadas**, *see* *u.* **aviadora**; (6) **capitán de barras**, Mex. boss-miner who marks the spot where the boring is to be made with the **chuzo** (1), giving it the proper inclination—this operation is called **trazar el barreno** (S. Ramirez), *see* *u.* **tumbe**; (7) geol. bar of rock; (8) sandbank, bar, *see* **banco** (10); (9) Cartagena, Sp. the lower horizontal tie (Fig. 15 *d*) of a pulley-frame [**horca** (1)], *c* = **prensa**; the back stays are the **diagonales** [or **tornapuntas** (3)], while the timbers tying them to the uprights are the **tornapuntas** (4), *see* **tirante** (2); **barras**, in the pulley-frame of a **malacate** (1), the horizontal ties which carry the pulleys, *see* *u.* **crucero** (10); (10) **barras-carriles**, bar-rails or flat iron placed on edge (**de canto**), equiv. Fr. **rail méplat**, *see* **carril** (3), *comp.* **rielera**.

**BARRACA**, hut or (S. Staff.) hovel at the pit's mouth for the convenience of the banksman, *syn.* **galera** (4), *comp.* **bartolina**, **jacal** (1) and (2).

**BARRAJE** (from Fr. **barrage**), dam or weir, *see* **presa** (1).

**BARRAL**, Port. clay-pit, *see* **barrero** (3).

**BARRANCA**, (1) a deep break or hole made by heavy falls of rain, *syn.* **barranco** (1), *comp.* **cárcava** (2); (2) ravine or (U.S.A.) gulch, *syn.* S. Am. **bajíos** (2), prov. **freo**, **hondonada** (1), **hoz**, **quebrada** (1), **quebradura**, **quebrantura**, equiv. Port. **barranco**, **bayanca**, **corrego** (1), *see* **barranco** (4), **derrame** (3), **esbarancado**, **rambla** (2), *comp.* **arroya** (2), **cañón** (5); (3) precipice (Port. **barranco**), *see* **precipicio**; (4) *see* **barranco** (2).

**BARRANCAL**, place abounding in **barrancas** (1).

**BARRANCEIRA**, Port. bank of a river, *see* **ribera**.

**BARRANCO**, (1) a **barranca** (1); a fissure, *see* **hendedura**; (2) Ant. Col. alluv. m. a vertical cut or face made artificially on the surface, or produced naturally by a landslide (Uribe), *syn.* **barranca** (4), **barranquera**, *see* **frente** (3); (3) **barrancos**, Venez. small round pits, about four feet in diameter, sunk to work lodes at surface, or to reach pay-dirt, *see* **cata** (4); (4) dell, a narrow valley; a **barranca** (2).

**BARRANCO**, Port. ravine; precipice, *see* **barranca** (2) and (3).

**BARREDURA** (sweeping), Ant. Col. (1) the conjunction of operations on a certain portion of a placer mine, having for their object the catching of the gold in the ground-sluiice [**canalón** (2)] (Uribe), *see* **tajo** (5); (2) **sacar la b.**, to clean up [**limpiar** (2)] the gold as above; (3) in **guaca** mining, taking the earth away in thin layers with a sort of spatula (**paleta de hierro**), *see* **barrer**.

**BARRENA**, (1) carp. drill or auger; **b. de disminución**, taper auger, **b. de guía**, centre-bit, *see* **broza** (1); **b. de gusano**, wimble; **b. de mano**, auger with a handle; **b. grande**, auger or borer; **b. pequeño**, gimlet; *see*

abocardo, barreno (4); (2) blast. drill or borer, *syn.* S. Am. **barreta** (3), **taladro** (2); **b. de cincel**, ordinary chisel borer; **b. de percusión**, jumper [*syn.* **barra** (2), **barreno** (3), **barreta** (3)]; **b. muerta**, a dull drill, **b. viva**, a sharp drill, *see* **ahorcada**, **apuradora** (1), **cachorros**, **guía** (3), **media**; **bor.** cutting-tool, boring-tool, *see u.* **taladro** (2), **trépano**; **b. de aletas**, *see* Fig. 16, *syn.* **trépano de aletas**; (3) **bor.** open auger, *see u.* **trépano**, *comp.* **tientaaguja**; (4) **b. de ensanchar**, **bor.** reamer or rounder (for widening bore-holes), *equiv.* Fr. **élargisseur**.

**BARRENADOR**, (1) *see* **barretero**; (2) *see u.* **pico** (3).

**BARRENAR**, (1) to drill, *syn.* **taladrar**, *see* **atrancar**, **perforar**; (2) to fire a round of holes (Dwight); **b. una roca** or **mina**, to blast a rock or mine (Velázquez), *see* **tirar** (2); (3) **barrenarse**, Mex. to communicate, hole through (of two mines or workings), *see* **barreno** (6).



FIG. 16.  
Barrena (2)  
de aletas  
(after Gou-  
pillière).

**BARRENERO**, (1) borer or driller, *see* **barretero**; (2) Almaden, Sp. a boy who attends with the boring-tools, *comp.* **abajador**.

**BARRENO**, (1) blast. bore-hole, blast-hole or drill-hole; *syn.* **agujero** (1), **caña** (3), Mex. **cohete** (2), **taladro** (4), Chile, **tiro** (9), *equiv.* Port. (Brazil) **buraco** (2), Fr. **trou de mine**, Ger. **Sprengbohrloch**; **b. ascendente**, á **chulano** or **seco**, upward hole; **b. descendente**, á **estaca** or **de agua**, downward hole; **b. horizontal** or **de pecho**, horizontal hole; **b. á techo**, drill-hole in the roof; **b. tendido**, drill-hole in the floor; *see* **campanela**, **candelero** (3), **culo**, **pistola**, **pistoleta** (2), **solayo**, **zapatero** (2); (2) **b. de sonda**, (deep) bore-hole, *equiv.* Fr. **trou de sonde**, Ger. **Tiefbohrloch**; **barrenos de flor**, small exploratory bore-holes, *see u.* **sondeo**; (3) large borer or auger; **b. de viento**, jumper, *see* **barra** (2), *u.* **barrena** (2); (4) carp. large auger, *see* **barrena** (1); (5) carp. hole made with an auger or gimlet: mech. hole made with a drilling-tool; (6) communication between two mines or workings, **holing-through**, *see* **barrenar** (3); (7) cross-cut, *see* **crucero** (1).

**BARRER** (to sweep), Ant. Col. alluv. m. **b. por peña**, to rake off the gold from the bed-rock [**peña** (4)] with hoes (**azadas**) or **almocafres**, in order to carry it to the ground-sluice [**canalón** (2)]; **b. un hoyo**, a similar operation applied to a more limited area in **minas de saca**; **b. el canalón**, analogous operation in the ground sluice; **b. por planes**, to rake above the pay-dirt [**cinta** (3)], when it is not possible to clean up the bed-rock itself (Uribe), *see* **barredura** (1) and (2).

**BARRERA**, (1) clay-pit, *see* **barrero** (3); (2) mound or heap of earth from which saltpetre is extracted; (3) circumference of boards or stones surrounding an **arrastre** (3); (4) c.m. barrier, barrier-pillar; (5) c.m. hoist. barrier, sliding-gate, or (Australia) bird-cage for closing the mouth of a shaft, or at the onsetting place (**cóncava**), *syn.* **puerta** (2), **valla**, *equiv.* Fr. **barrière**, *comp.* **guairona**; (6) rail. barrier at a level crossing (**paso á nivel**), *see* **guardabarrera**.

**BARRERO**, (1) potter, *see* **alfarero**; (2) Extr. Sp. height, eminence, a high ridge of hills, *see* **serranía**; (3) clay-pit; place full of clay and sand, or clay and mud, *syn.* **barrera** (1), **barrizal**, equiv. Port. **barral**; (4) **barrereros**, Buenos Ayres, Arg. salt-licks (Humboldt).

**BARRETA**, (1) small bar, crowbar, *see* **barra** (1), **barrón**; (2) jumper, *see* **barra** (2); (3) S. Am. drill, *see* **barrena** (2); **b. pérdida**, dead-work in unprofitable prospecting (Dwight); (4) **media b.**, Peru, gallery [**galería** (1)] inclined at an angle of 45 degrees (**á media pendiente**) or thereabouts, but according to the new regulations must nowhere exceed 40 degrees, *comp.* **chiflón** (4).

**BARRETERO**, miner properly speaking, borer or driller (*see* **barrenero**), *syn.* Guan. Mex. **barrenador** (1), *see* **herramienta** (2), **minero** (2), *u.* **raya** (3), **tequio** (2); Cerro de Pasco, Peru, miner who breaks the ore with the bar [**barreta** (1)], gad [**cuña** (1)] or pick [**pico** (2)], his assistant is called **apire** (2) or **hapire** (2), *see* **cholo barretero**, *comp.* **auquis**.

**BARRETILLA**, small bar [**barreta** (1)].

**BARRETÓN**, large bar, crowbar, *see* **barrón**.

**BARRETONCILLO**, small bar.

**BARRICA**, small barrel, *see* **tonel** (1); a cask containing sixty gallons (Velázquez).

**BARRIL**, (1) cask or barrel, *see* **tonel** (1); **b. de amalgamación**, amalgamation barrel; (2) **b. de extracción**, c.m. corf, m.m. kibble, *see* **tonel** (2); (3) Fr. Guiana, a weight equiv. to 100 kilogrammes (L. Levat).

**BARRILERO**, (1) man in charge of barrel-process of amalgamation; (2) barrel-maker, cooper.

**BARRILETE**, carp. hold-fast, dog, clamp, *syn.* **siete** (1).

**BARRILLA** (Port. **barrilha**), (1) plant of the genus *Salicornia*, from the ashes of which a mineral alkali is extracted, *see* **barrillar**; (2) impure soda called in commerce "barilla," extracted from (1), *syn.* **mazacote** (1); **b. de Alicante**, com. Spanish or Alicante soda, *see* **natrón**, **sosa** (1); (3) Bol. native copper disseminated in grains in copper ores, *see* **cobre** (2); (4) Bol. copper-ore concentrates; (5) Bol. tin-ore concentrates, said to average 60 to 70 per cent. of metal, *see* **estaño** (3); (6) **barrillas**, Ant. Col. gold-mill. wooden divisions of blanket-strakes, copper-plates, etc.; (7) **piedra de b.**, *see u.* **piedra**.

**BARRILLAR**, **barilla**-pits, where the plants from which the "barilla" is extracted are burnt, and collected at the bottom in a stony mass called **rocheta**; it is the barilla ashes of commerce (Neuman and Baretti), *see* **barrilla** (1) and (2).

**BARRIO**, (1) district or ward of a town or city; (2) suburb; (3) Mex. a settlement (Lucas).

**BARRIZAL**, *see* **barrero** (3).

**BARRO**, (1) clay, loam, mud, earth; **b. de olleros**, potter's clay, **vaso de b.**, earthen vessel, *see* **arcilla**, **blanquizal**; Chile, mud or pulp (patio process), *see* **lama** (2); (2) geol. argillaceous marl [**marga** (1)]; (3) **barros**, Col. the overburden of auriferous alluvial deposits, *see* **montera**



- (3); (4) Braz. variously coloured layer of fine sand mixed with clay in which the *cascalho* of the valley-deposits rests—it is distinguished from the latter by being bedded, but it also contains diamonds (Bauer).
- BARRÓN**, large bar, crowbar, *syn.* barra (1), *barreta* (1), *barretón*, *palanca* (2) de hierro, *see* pie (2); *b. de compuerta*, hydr. sluice-bar (Ponce de León).
- BARROTE**, (1) batten or scantling, *see* listón; *escalera de b.*, *see* escalera (3); (2) rail. fish-plate (Ponce de León), *see* eclisa.
- BARTOLINA**, Mex. watchman's house at mine entrance (Dwight), *comp.* barraca.
- BARZÓN**, strap used for tying a man to a rope when descending a shaft, and having one foot in a loop, *see* bajada, *u.* caballo (3). (NOTE.—In Spain = strap with which oxen are yoked to the plough-beam.)
- BARZONAZOS**, *see* latigazos.
- BASALTO**, basalt.
- BÁSCULA**, (1) lever, pole, staff, *see* palanca (1); (2) reciprocating motion; *palanca* (6) de b., rock-shaft or rocker-shaft; *vagón de b.*, *see u.* vagón; (3) platform scale; met. scale for weighing charges; rail. weighbridge.
- BASCULADOR**, transp. c.m. tippler, Molina very properly confines the term to apparatus for tipping wagons at a sufficient angle to discharge their contents—revolving tipplers being known as *volcadores*, *see u.* vagón.
- BASTARDA**, bastard file, *see* lima.
- BASTARDO, DA**, adj. bastard, used in the same sense as in English, *e.g.*, bastard lode, rock or working.
- BASTIDOR**, (1) frame or carriage of a rock-drill (*perforador*), *syn.* carro (4), soporte (3); (2) frame carrying the body of a wagon or tub [*carro* (2)]; (3) hoist. a vertical frame for carrying wagons suspended by hooks, *syn.* estribo (5)—replaced by cage [*jaula* (2)]; (4) pump. *see u.* horquilla (1); (5) timb. frame (Ponce de León), *see* cuadro (1) portada.
- BASTIMENTO**, Mex. miner's luncheon (Dwight).
- BASTO**, (1) pack-saddle, *see* aparejo (2); (2) mech. prep. coarseness of screens (Gamba), *see* criba (2).
- BASTONES**, Palencia, Sp. c.m. timb. thin branches used in lagging [*revestimiento* (1)].
- BASURA DE PLOMO**, Mex. lead-dross (Dwight) (Span. = sweepings).
- BATÁN**, (fulling-mill), *tierra de b.*, fuller's earth, *see* greda (1).
- BATANE DE PIEDRA**, Cerro de Pasco, Peru, stone plate for grinding samples (O. F. Pfordte).
- BATEA** (Braz. bateia), Span. Am. a concave wooden vessel used in gold-washing, about 20 inches in diameter and 2½ inches deep, the *dulang* of Malaya and the *halagay* of the Mysore Province of India are eastern varieties; *b. apuradora*, Mex. in the patio process, a wooden bowl floating in the *pila apuradora* to receive the *cabecilla* (2) (G. F. Lyon, 1828), which is re-washed; *b. larga*, *see* tepestate; in Ant. Col. the following kinds are used: (a) *b. vetadora*, 1 foot in diameter, with ears or handles; (b) *b. lavadora*, generally 16 inches in diameter by

2 inches deep, of spherical segment, and without handles ; (c) **b. cortadora**, similar to (b) but shallower and well polished in the concave part, used in cleaning up blanketings, amalgam, etc. ; (d) **b. zambullidora** or **zambullida**, oblong or elliptical, 3 to 4 feet long, 14 to 18 inches wide, and having a handle half a yard wide, used by gold-washers (*see* **zambullidor**) ; *see* **ceja** (2), **chicar**, **cortar** (1), **jamurar**, **jumos**, **tocar**, **zambullir**, *comp.* **achúa**, **chua**, **cuchara** (1), **gamella** (2), **jícara**, **platillo** (1), **platón**, **platoncito**, **poruña**, **puruña**, **tecomate** (1).

**BATEADA**, Port. the portion of gold contained in a **batea** (Elwes).

**BATEADOR**, *see u.* **cacho** (2).

**BATEADORA**, a woman who uses a **batea**.

**BATEAR**, Port. to wash gold (auriferous gravel) in a **batea** (Elwes).

**BATEIA**, Braz. **batea**.

**BATEQUE**, L. Cal. Mex. deposit formed by a spring of water (*comp.* **aluvión**). "Llaman **bateque** en la Península á los depósitos formados por los veneros, en el centro de un arroyo, ú al pie de la sierra" (A. del M. de F.).

**BATERÍA**, mech. prep. battery ; elect. battery.

**BATIBOLÉO**, Mex. company of miners working a stope of high-grade ore (Dwight).

**BATIDOR**, mech. prep. (1) a kind of rake (Derb. "scraper"), *see* **azadón** (3) ; (2) beater (Fr. **agitateur**) of a dolly-tub, *syn.* **molinete** (4), *see* **tina** (1).

**BATIENTE**, jamb or post of a door, *see* **jamba**.

**BATIR** (to beat), (1) Ant. Col. to break up and carry away auriferous gravel by means of water (Muñoz), *see* **desarenar**, **chocar**, **desmontar** (3) ; (2) **b. el monte**, to explore the mountains.

**BAULEAO**, Ant. Col. iron pyrites in the form of cubical crystals (Uribe), *see* **pirita**.

**BAYANCA**, *see* **barranca** (2).

**BAYETA**, **BAYETÓN**, coarse woollen cloth or baize, "blanket" of blanket-tables or blanket-strakes, equiv. Port. **baeta**, Braz. **bietta**, **faizada** (blanket), *see* **pañó** (1).

**BAZOFIA**, Peru, waste rock (Dwight), *see* **desecho** (3).

**BENEFICIADOR**, *see* **azoguero**.

**BENEFICIAR**, (1) to work or improve a mine ; (2) to derive profit from working a mine ; (3) met. to reduce the ores of a mine.

**BENEFICIO**, (1) the working of mines, *see* **laboreo** ; (2) profit derived from working a mine, return, *syn.* **reparto** ; (3) met. reduction, extraction, treatment (**tratamiento**), process ; Mex. **b. de cazo**, the **cazo**, caldron or hot amalgamation process, *see* **cazo** ; **b. de curtido**, *see* **curtido** ; **b. de hierro**, amalgamation reduction with the addition of fragments of iron ; **b. de colpa**, the **patio** process with **colpa** (colcothar) in lieu of **magistral** ; **b. de pella de plata**, amalgamation reduction with the addition of silver amalgam ; **b. de patio**, the **patio** or cold amalgamation process, *see* **patio** (2) ; **b. de toneles**, the Freiberg or barrel-

amalgamation process ; **b. por amalgamación**, amalgamation process ; **b. por cianuración**, cyanide process ; **b. por cloruración**, chlorination process ; **b. por fuego**, reduction by smelting ; *see* **cocimiento**, *u. oficina* (3) ; (4) **b. de metales**, mechanical preparations of ores, ore-dressing ; (5) **labores de b.**, winning workings ; (6) Arg. and Chile, productive ore ; Chañarcillo, Chile, the richest part of a lode (Domeyko) ; **primer b.**, first productive ore met with ; **cuerpo de b.**, ore-body.

**BERBIQUÍ**, carpenter's brace, ratchet brace, *syn.* **carraca**, **chicarra** ; wimble.

**BERILO**, beryl ; **b. verdemar**, aquamarine, *see* **esmeralda**.

**BERLINGADO**, poling or method of refining tin by burning green poles in a bath of the molten metal, the process also being known as "boiling," *see* **estaño** (1).

**BERMELLÓN** (vermilion), cinnabar ; an earthy variety of cinnabar (**cinabrio**) in stains and grains ; Guadalcázar, S. L. Potosí, Mex. bright to dull red powdery ore, which is found in stringers running through the gypsum, and spotted through many of the larger ore-bodies, especially those of chamber form (H. F. Collins). "El mineral dominante es el cinabrio oscuro y subido que los practicos distinguen con los nombres de bermellón y granate, cuyo segundo denominación reservan para el cristalizado" (A. del M. de F.). *See* **mercurio** (2), *comp.* **granate** (2), **negro** (2).

**BERNALEJO**, *see* **sombrerete** (3).

**BERROQUEÑA**, **pedra b.**, coarse-grained granitic stone, granite, *see* **granito** (1).

**BETA**, Port. a lode or vein of metal, *see* **veta** (1).

**BETUM**, **BETUME**, **BETUMEN**, *see* **betún**.

**BETÚN** (Port. **betume**), bitumen or asphaltum, *syn.* **alquitrán mineral**, **asfalto**, **azulaque**, **betún judáico**, Mex. **chapapote**, **pez mineral**, *see* **brea**, **tembladeras**, **copey**, **zulaque** ; **b. marga**, bituminous marl ; **alquitrán de tierra**, species of bitumen from the East Indies which floats on water. **NOTE**.—Formerly spelt **betúm**, **betume**, **betumen**.

**BIBORO**, botryolite (Ponce de León), a variety of datolite which is botryoidal and columnar within.

**BICA**, Braz. (1) inclined portion of the sluice used by river-washers (Calogeras), *comp.* **cabeceira** (1) ; (2) sleeping-table, *see u.* **mesa** (1).

**BICHARRA**, Peru, small furnace with inclined stack (Dwight), *see* **horno** (2).

**BIELA**, (1) connecting-rod, *syn.* **barra** (4) or **biela de conexión**, **biela motriz** ; **b. de coplamiento**, coupling-rod ; **b. articulata**, link motion (Ponce de León) ; (2) crank, *see* **manubrio** (3) ; (3) brace-strut ; (4) axle-tree, *see* **eje** (2).

**BIETTA**, Braz. **baize**, *see* **bayeta**.

**BIFURCACIÓN**, (1) branching of a vein when following it along the strike, *see also* **encuentro** (1) ; (2) transp. branch-road, *see u.* **desvío** (2).

**BIFURCAMIENTO**, branching (of a vein), *see* **bifurcación** (1).

**BIFURCARSE**, *see se* **bifurca**.



**BIGORNA**, Port. anvil, *see* **yunque** (1).

**BIGORNETA**, small anvil ; silversmith's anvil, *see* **yunque** (1).

**BIGORNIA**, anvil, *see* **yunque** (1).

**BIGOTE**, (1) semicircular tap-hole of a furnace [**horno** (2)], *syn.* **pecho** (1) del **horno**, *see* **sangradera** (2) ; (2) **bigotes**, flames coming out of (1) (Acad.) ; (3) **bigotes**, infiltrations of metal in the cracks or crevices of the inside of a furnace [**horno** (2)] (Acad.).

**BILCA**, Cerro de Pasco, Peru, raw-hide trough into which mercury from the **manga** (2) drops (O. F. Pfordte).

**BILITRONES**, S. Am. communication between washing-troughs (Lucas).

**BILLOTO**, Port. log, block ; **b. de madeira**, log timber.

**BIMBALETE**, Peru, crude ore-mill operated by two men. The grinder is a large stone with transverse bar by which a rocking motion is given, *syn.* **quimbalete** (Dwight), *see* **boliche** (4), *comp.* **maray**.

**BINCHES**, Arg. "The gold-bearing conglomerate composed chiefly of pebbles of Silurian *grauwacke* and slate is further characterised by cubical crystals of pyrites locally termed **binches**, the abundance of which is regarded by the miners as an indicator of the richness of the conglomerate (this, however, is not invariably a safe guide), and by the presence of an extremely fine magnetic black sand which is always found in the washings to accompany the gold" (V. Novarese). *See* **pirita**, **lama** (5). NOTE.—The above word appears to be a corruption of Engl. **benches**.

**BISAGRA**, hinge, *syn.* prov. **alguaza**, **charnela** (1), **gozne**, *see* **quicio** (1).

**BISALHO**, Port. com. a bundle of rough diamonds (Elwes).

**BISAUTOMOTOR**, plan inclinado **b.** = Fr. plan incliné bis-automateur.

**BISARMA**, Port. com. two-edged hatchet, *see* **u. machado**.

**BISEL**, (1) bevel, bevel edge, chamfer, *see* **cortar** (2) ; (2) cutting edge of any tool ; blast. bor. bit of a borer, *syn.* **boca** (6), **broca** (2), **corte** (1), **cuchareta**, **filo**, **mecha** (5), **tajo** (8), **taladro** (3), equiv. Fr. *ciseau*, Ger. *Bohrschneide* ; **b. en cruz**, bor. cross-bit, *see* Fig. 17, equiv. Ger. **Kreuzmeissel**, *see* **corona** (1).

**BISMUT**, **BISMUTO**, (1) bismuth ; (2) **bismuto-blenda**, eulytite, an ore from Chihuahua, Mex., containing from 9 to 29 per cent. of bismuth, and associated with copper pyrites, galena and blende (the last two occasionally). NOTE.—According to Dana, eulytite is a bismuth silicate from Johanngeorgenstadt.

**BITES**, Ant. Col. slime produced by the grinding or stamping of ore, *see* also **fango**, **lama**, **lodo**, *comp.* **mamaja** (2).

**BITOLA**, Port. (1) standard measure, rule ; (2) rail. gauge, *see* **ancho**.

**BLANCO**, CA, adj. white, for **plata blanca**, *see* **u. plata** (2) ; metal blanco, cerargyrite or horn silver (**plata cornea**) ; **en blanco**, hemp rope in its natural state, *i.e.*, without a coating of pitch, *see* **cañamo**.



FIG. 17.—Bisel  
(2) en cruz (after  
G. Köhler).

**BLANCO**, (1) mark [*marca* (2)] made on the side of a level, etc., when setting a bargain, *see* *guardaraya*, *machote*; (2) mixture of whiting, lime, etc., to size or lay the first coat for painting; *b. de estuco*, stucco whiting (*Velázquez*).

**BLANDOS**, *see* *pastosos* (2).

**BLANDURA**, soft, crumbly ground.

**BLANQUEAR**, to whitewash, *see* *encalar*, *enjalbegar*, *enlucir*, *enyesar*, *jalbegar*, *revocar*.

**BLANQUIZAL**, **BLANQUIZAR**, whitish clay, pipe-clay (*Velázquez*), *see* *barro* (1), *comp. albero*.

**BLENDA** (Port. *blende*), zinc blende or blende, *syn. esmanil*, Mex. metal negro; *b. amarillo*, yellow blende, *b. parda*, brown blende; *see* *acanelados*, *carne de vaca* (2), *chumbe*, *congo* (2), *copalillo*, *espejuelo* (6), *estoraque*, *gallinazo*, *ojo* (4).

**BLINDADO** (ironclad, armoured), ground secured by metallic supports, *see* *blindaje*.

**BLINDAJE** (armour-plate), securing ground by metallic supports, equiv. Fr. *blindage*.

**BLONCO BUENO**, Guan. Mex. third class of rich ores from the *veta madre*, yielding 400 ounces of silver per ton (*Tilmann*), *comp. apolvillado*.

**BLOQUI**, block, ingot, *see* *lingote*.

**BOBINA**, (1) hoist. bobbin or reel (for flat ropes), *syn. carrete*, *carretel*, equiv. Fr. *bobine*, *see* *núcleo* (1), *comp. tambor* (1); (2) el. coil, *syn. carrete*; *b. de inducción*, induction coil.

**BOBA**, **BA**, adj. *veta boba*, Chile, large sterile vein, *see u. carrancho* (2).

**BOCA** (mouth), (1) the first opening made on a vein; (2) mouth, brace, collar, or (N. Engl.) eye of a shaft (c.m. pit-top), *syn. boca de pozo*, *brocal* (3), Mex. *cajonero* (1), equiv. Fr. *orifice au jour*, Ger. *Mündung*, *Mündloch*, *see* *corte* (4), *comp. contratiro*; mouth of a well [*see* *agujero* (5)] or adit; *b. mina*, mouth of a shaft or adit; in Mex. *boca minas* are very irregular openings independent of the shaft, or communicating with it at a lower level; in Peru *boca minas* are openings or entrances to mines. "Many of them are exceedingly shallow and not more than 500 of them deserve the name of shafts" (*Tschudi*, 1847). *B. mejora*, Mex. the shaft or *boca* communicating with the *estaca fija*, and facilitating the interior workings of mines (*Gamboa*, 1761); (3) bank or pit-mouth, equiv. Fr. *margelle*, Ger. *Hängebank*; (4) *see u. llave* (14); (5) *see u. viage*; (6) mouth of a shovel, point [*punta* (1)] of a pick, bit [*bisel* (2)] of a drill, mouth of a plane, lip of an auger, face [*cara* (1)] of a hammer; (7) mouth of a furnace (*see* *cebadero*), charging-hole, or door or fire-door of a furnace [*horno* (2)], manhole [*agujero* (4)] or mudhole [*registro* (2)] of a boiler, etc.; (8) *b. de regadera* (1), pump. snore-piece or strainer of a wind-bore; (9) *b. de río*, mouth of a river, *see* *desembocadero*; (10) *see* *llave* (13); (11) *b. del volcán*, crater, *see* *cráter*.

- BOCACAZ**, opening left in the weir or dam of a river, sluice- or flood-gate, *see* *compuerta* (2).
- BOCADO**, *see u. derecho* (2).
- BOCAHORNO**, furnace with an open mouth.
- BOCARTE**, stamp-mill, *syn.* *molino*, *molino de pilones*, *pisones* or *estampillas*, equiv. Fr. *bocard*; *b. californiano*, *seco* or *húmedo*, Californian, dry or wet crushing stamp-mill, respectively; for parts of stamps, *see almadaneta* (1), *cabeza* (5), *calzadura* (2), *cama* (3), *dado* (1), *leva* (2), *mango* (2), *pisón* (2), *zapato*.
- BOCARTEADO**, pounding (Ponce de León).
- BOCARTEAR**, to crush, stamp or grind the ore (Ponce de León).
- BOCARTEO**, crushing, stamping or grinding of the ore (Ponce de León).
- BOCAZA**, *b. de alto horno*, throat of a furnace; *b. de carga de un horno*, mouth of a furnace (Ponce de León).
- BOCAZO**, blast. explosion through mouth of bore-hole without producing effect (*Acad.*), *comp.* *chiflarse*, *desbocarse*; *dar bocazo*, to be "blown out" (of a shot), *comp.* *mechazo*.
- BOCEL**, *see u. cepillo* (1).
- BOCHORNO** (hot sultry weather, scorching heat); Mex. (1) excessive heat which puts out the lights in mines, produced by want of ventilation, cross-cuts, etc., and which is increased by the effluvia from workmen, etc. (Gamboa, 1761), *see u. ácido* (1), *comp.* *vapor* (5); (2) after-damp, *see mofeta* (2).
- BOCINA**, mech. bushing, thimble or sleeve, *see boquilla* (5).
- BODEGA**, (1) storeroom, *see almacén* (1); (2) chamber-deposit, *see u. galerón*; (3) S. Am. village or small town.
- BODOQUE**, Batopilas, Chih. Mex. chloride of silver (horn silver) found near the surface (Dahlgren), *see also u. plata* (2). NOTE.—Dwight gives argentite—in Spain = pellet of clay.
- BOINA**, Mex. miner's cap (Dwight), *see vestido*.
- BOLA** (ball), (1) mech. ball; *bolas del regulador*, st. eng. governor-balls; *válvula de b.*, ball-valve; (2) *b. de grasa*, met. slag-ball (Dwight); (3) *bolas*, Guadalupe y Calvo, Zac. Mex. more or less rounded masses of rich argentiferous [*see plata* (2)] and auriferous [*see oro*] ores, found at a certain depth; at Catorce, *bolas* are sometimes kidney-shaped, *comp.* *boleo* (1), *bolones*; (4) *bolas*, Almaden, Sp. small ore of mercury moulded into bricks, *see u. vaciscos*; Huitzucó, Guerr. Mex. residues from the quicksilver reduction-furnaces mixed with clayey smalls [*tierras* (4)], and made into balls; these are reduced in smaller furnaces, the resulting burnt balls being known as *tierras quemadas*, *see u. mercurio* (2); (5) *bolas*, geol. spherulites; (6) blast. round ball of clay or gypsum used in tamping, *syn.* *boliche* (2).
- BOLEA**, swing-tree bar used in a horse-whim [*malacate* (1)], when two or more horses are used at one beam, *comp. u. horquilla* (1).



**BOLEO**, (1) loose stone from a vein generally rounded like a ball, float-mineral; nodule or kidney of iron, copper, or other ores [*comp. bola* (3)]. “Estos minerales están á veces, ordenados concéntricamente, formando nódulos ó como se dicen en boleó” (Zárate on veins of Zacatecas). L. Cal. Mex. in the Boleo copper mine, peculiar globular concretions of copper oxide and carbonate, sometimes several inches in diameter; any rounded mass of concretionary origin, whether solidified from fusion, due to decomposition or growth, *e.g.*, cocade- or ring-ores (Ger. **Cocardenerze**, **Ringerze**), *see* **haba**; (2) name sometimes given to bunches of ore when small and occurring close together, *see* **clavo** (2); (3) Mex. a dump-pile for waste rock (Chism), *see* **vaciadero**.

**BOLETA**, schedule; **boletas**, tickets of sale of ores; cheque tickets; account of charges and produce of an amalgamation operation (M. J. Gloss.); **boletas**, Mex. vouchers, proving the payment of the mining tax by means of cancelled stamps.

**BOLICHAR**, Mex. to treat or reduce ore in the **boliche** (4).

**BOLICHE**, (1) Mex. in the **patio** process, a bowl concentrator, *see* Fig. 17A, *see u.* **polvillo** (3); (2) *see* **bola** (6); (3) Peru, dolly-tub, *see* **tina** (1); (4) Mex. small ore-mill like a **bimbalete** (Dwight); (5) Las Alpujarras, Sp. met. small reverberatory furnace with two floors, for smelting lead ores, *see* **Ibran**, p. 435; (6) Cerro de Pasco, Peru, mill in which the **repaso** is performed by Indians (Tschudi).

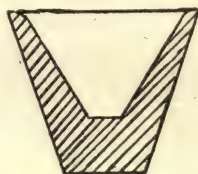


FIG. 17A. —Boliche (1)  
(after Eggleston).

**BOLINETE**, Braz. a kind of large sluice [**canoa** (2)] made of planks, the width is 1 m. at the head-board (**cabeceira**) and 0.9 m. at the opposite extremity, the length being from 1.50 m. to 3 m. In the narrowest part are wooden riffles for collecting the concentrates (A. Pereira), *syn.* **bugre**.

**BOLÍVAR**, Venez. a coin equal to 1 **peseta** or franc = 20 cents. U.S.A.

**BOLLO**, (1) **bollos**, Mex. formerly, in the **patio** process, triangular bricks of amalgam or segments of amalgam (**amalgama**) each weighing about 30 lb., *syn.* **cuerpos** (1), **marquetas** (3). NOTE.—The term was also applied to the complete circular cakes or discs of the same, a pile of these, from its resemblance to a pine-apple, being termed **piña** (3); (2) Peru, pocket of ore (Dwight), *see* **bolsa** (1).

**BOLO**, (1) Phil. large knife like a **machete**; (2) Ant. Col. anhydrous red ochre of placers (Angel), *comp.* **carmín**; **b. amarillo**, yellow ochre; **b. colorado**, red ochre, *see* **ocre**.

**BOLONES**, Chile, large rounded pieces of copper ore, *comp.* **bola** (3).

**BOLSA** (purse), (1) in gold mines the part in which the purest gold is found (Acad. 1783 and in latest editions); a rich patch, bunch or pocket of ore, *syn.* Peru, **bollo** (2), **bolsada** (1), **bolsonada** (1), Venez. **bomba** (2), equiv. Port. (Braz.) **olho** (2), Fr. **poche** or **nid de minerais**,

Ger. *Erznest*, *Erzputzen*, *see* *bolsilla*, *bolsón* (4), *cangrejera*, *cascajo* (4), *clavo* (2), *mantilla*, *masa* (1), *matera*, *nido*, *ojo* (1), *remolino* (2), *tope* (6); (2) a small, irregular deposit, *see u. bolsada* (3); (3) druse or vug, *see drusa*; (4) cistern or tank, *see estanque* (3); (5) com. exchange or place where merchants, bankers and brokers meet, *syn. lonja*; *b. de valores*, stock exchange, *comp. cambio* (3); (6) Peru, *see capacho* (2).

**BOLSADA**, (1) rich pocket of ore, *see bolsa* (1); (2) druse, *see drusa*; (3) in a general sense, an irregular deposit [*see criadero* (1)], if large = *masa* (3), if small = *bolsa* (2), *nido* or *riñón* (1); *bolsadas entrelazadas*, stockwork [*see cúmulo* (2)]; *mineral de bolsadas*, pockety or bunchy ore, *comp. bolsonada* (2).

**BOLSILLA**, little bunch or pocket of ore, *see bolsa* (1).

**BOLSÓN**, (1) iron ring in a vertical bar to which horizontal tie-rods are attached for strengthening arches (Acad.), *see arco*; (2) stone on which an arch (*arco*) or vault is sprung (Velázquez); (3) a basin desert-plain, *see llano*; (4) large pocket of ore, *see bolsa* (1).

**BOLSONADA**, (1) bunch or belly of ore, *see bolsa* (1); (2) *bolsonadas*, Peru, pockety veins (Dwight), *comp. u. bolsada* (3).

**BOMBA**, (1) pump, pumping-engine; *b. alimenticea*, feed-pump (of a boiler); *b. aspirante*, or *chupadora*, suction-pump (Ger. *Saugpumpe*); *b. aspirante y elevadora*, *b. aspirante é impelente* or *agotadora*, drawing-lift or bucket-set or -lift (sometimes called *b. elevatoria*, but, strictly speaking, the latter is an inverted force-pump), *syn. b. de cabo* (6), equiv. Fr. *pompe élévatoire*, Ger. *Hubpumpe*; *b. centrífuga* or *rotatoria*, centrifugal pump; *b. de acción directa*, direct-acting pump; *b. de alimentación*, feed-pump, donkey-pump; *b. de cadena* or *de rosario*, chain-pump, *see cadena* (6); *b. de doble efecto*, double-acting pump; *b. de mano*, hand-pump; *b. de pistón aspirante impelente*, ordinary piston-pump; *b. de pistón inmergente*, *b. impelente* or *de presión*, *b. forzadora*, force- or plunger-pump, equiv. Fr. *pompe foulante*, Ger. *Druckpumpe*; *b. de simple efecto*, single-acting pump; *b. de ventilación*, air-pump; *bombas gemeles*, duplex pumping-engine; *b. hidráulica* or *máquina de columna de agua*, water-pressure engine; *b. móvil*, *b. colgante*, or *b. suspendida*, sinking-pump; *b. neumática*, air-pump; *b. rotatoria*, *see b. centrífuga* and *aleatoria*; *b. volante*, drawing-lift which is not fixed, but suspended by chains, etc.

For parts of pumps or pumping apparatus, *see aro* (4), *borracho* (1), *brazo* (2), *caja* (4) and (5), *camisa* (3), *campana* (2) and (6), *chapaleta*, *contrabalanazón*, *cuerno* (2), *cuerpo* (8), *émbolo*, *u. juego* (1), *tirante* (3).

For varieties of pumps, *see cangilón* (3), *fuelle* (2), *see u. cargada*, *u. desagüe* (2), *escalonada*; (2) Venez. rich patch or pocket of ore, *see bolsa* (1); (3) geol. volcanic bomb; (4) *b. marina*, water-spout, *syn. tromba*, *see manga* (6); (5) retort made of sandstone (Velázquez), *see retorta*; (6) lamp chimney (Velázquez), *see u. tubo* (1).

**BOMBPEAR** (to bombard), Ant. Col. (1) alluv. m. to bring a strong volume of water to the channel [*brecha* (2)] or ground-sluice [*canalón* (2)] in

order to break up the contents and wash them (Uribe); (2) gold mill. a battery is said to **bombear** when a large spout of water issues from a hole in the screen; (3) vulg. to discharge or expel, *e.g.*, a miner or **peón**, *see* **despedir**.

**BOMBERO**, (1) fireman; (2) pitman or pumpman; (3) engine-man (Ponce de León).

**BOMBILLA**, *see u.* **candil**.

**BOMBILLO**, (1) lamp chimney, *see u.* **tubo** (1); (2) small pump [**bomba** (1)]; (3) tube to draw off liquids; (4) Mex. cartridge (as of dynamite) (Dwight), *see* **cartucho**.

**BOMBO**, *see u.* **tambor** (1).

**BONANZA** (fair weather, prosperity), Span. Am. a large deposit of good ore: "La concentración de la mena en la masa" (Molina); *syn.* **ennoblecimiento**, Cerro de Pasco, Peru, **boya**, *comp.* **borra** (3), **borrasca** (1), **en frutos**. NOTE.—This word has long been adopted by Anglo-Saxons; its use is generally restricted to deposits containing one of the precious metals. A mine is said to be "in bonanza" when it is paying large profits. In Mexico **bonanzas** usually occur in the richest zone, or in that containing sulphide of silver with black antimonial sulphide.

**BONETE**, Mex. hat used to catch very rich ore as it is picked down with a sharp bar (Dwight).

**BONGO**, (1) Cent. Am. species of canoe (Acad.), *see* **bungo**; (2) Ant. Col. wooden box in which the sands from the mill are deposited for subsequent treatment (Uribe).

**BOÑIGA**, cow-dung or ox-dung; mixed with mud it is used for plastering houses in S. America.

**BONO**, *com.* bond, certificate.

**BOQUETE**, (1) gap, narrow entrance, pass, *see* **paso** (4); (2) **boquetes de paso**, Almaden, Sp. intermediate arches (Molina), *see* **arco**, *comp.* **fundamentales**; (3) **b. del descansillo**, manhole of the platform or sollar of a ladder-way, *see* **descanso** (1).

**BOQUILLA** (little mouth), (1) hole for wick or oil in a lamp (**lámpara**); (2) chisel for mortising, *see* **cincel** (1); (3) hydr. m. Chile, nozzle of a monitor, *see* **pitón** (1); (4) mas. verge, course, *see* **camada** (2); (5) mech. bushing, bush, *see* **bocina**.

**BORATERA**, Chile, borax deposit.

**BORATO CALCINADO**, Chile, ulexite, after being desiccated in reverberatory furnaces, but still containing from 10 to 15 per cent. of water, *see* **tiza**.

**BÓRAX** (or **borraj**), borax, *syn.* **atincar**, **crisocola** (3), *see* **borra** (5), *comp.* **tiza** (3).

**BORDE**, (1) bank of a river, *see* **ribera**; (2) *see* **bordo** (1); (3) *see* **bordo** (3).

**BORDETA**, a small pillar in a mine, *see* **pilar** (3).

**BORDO**, (1) ore left untouched in a previous working in an old mine-work (M. J. Gloss.), *syn.* **borde** (2), *see* **macizo** (1); (2) pillar left to support vein-matter (Dwight), *see* **pilar** (3); (3) block of ground ready for stoping (Dwight), *syn.* **borde** (3), *see* **macizo** (2); (4) *see* **L.A.B.**



**BORNEADOR**, blast. the man who turns the drill, *comp.* piqueador.

**BORNEAR**, blast. to turn the drill [barrena (2)], *comp.* piquear.

**BORRA**, (1) Mex. vein-matter or matrix, *see* matriz (1); (2) Mex. barren rock, *see* estéril (2); **b. de veta**, soft rotten rock (Dwight); (3) **en borra**, Mex. in poor or unproductive ground (of a mine or vein); (4) Mex. lead-dross (Dwight); (5) refined borax (**bórax**); (6) Chile, Peru, sediment deposited in the **chulladores**, *comp.* ripio (8).

**BORRACHO** (intoxicated), (1) **borrachos**, Ant. Col. vertical pieces of wood connecting a water-wheel with the pumps used in unwatering **trinchos** (2) or **tapas** (4), and which oscillate at the lower end (Muñoz); the rocker of a Cornish pump when driven by a water-wheel, *see* bomba (1); (2) Mex. in the patio process, a globule of mercury (**cuerpo**) which has a sluggish or irregular movement in rolling about the vanning-horn.

**BORRADOR**, (1) rough draft; (2) day-book, *syn.* libro b.

**BORRAJ**, *see* bórax.

**BORRASCA** (storm, tempest), Span. Am. (1) an unproductive mine, or a mine in an unproductive state: "La difusión de la mena en la masa" (Molina); *comp.* bonanza; **dar or caer en b.** (Chile, **en broceo**), to become unprofitable (of a mine or vein), *see* emborrascarse, *comp.* borra (3); (2) barren rock, *syn.* piedra bruta (2), *see* estéril (2), roca (2); (3) **b. de la capa**, *see* dispersión.

**BOSADO**, oro b., Ant. Col. alluvial gold, *see* u. corrido, da.

**BOSQUE**, wood, forest, grove.

**BOTA** (small leather wine-bag), Mex. a large bag made of ox-hides and used for drawing water from the shafts; they hold from 70 to 200 gallons of water, and are worked by a winch [**torno** (2)] or mule-whim [**malacate** (1)]. The hoop at the top = **aro**. A **bota grande**, made from 2 to 2½ hides, will hold up to 200 gals. of water, a **bota** of 1½ hide holds up to 125 gals., a **bota** of 1 hide from 37 to 75 gals.; *see* botilla, desagüe (2), **saco** (1), *u.* **soga**, *comp.* **zaca**; a **bota chica** is a small leather bag.

**BOTADERO**, (1) shallow of a river, ford, *see* vadera; (2) dumping-ground for ore or waste (Ger. **Halde**), *see* vaciadero.

**BOTADOR**, (1) punch (for driving out nails), *comp.* **punzón** (3); (2) furnace-bar, fire-iron; (3) **b. de horno**, tapping-bar (Ponce de León), *syn.* **espetón** (1).

**BOTAFUEGO**, linstock, match, *see* mecha (1).

**BOTAMIENTO**, fault or dislocation, *see* salto (1).

**BOTÃO** (button), Minas Geraes, Braz., screw-nut, *see also* porca, tuerca.

**BOTE**, (1) gallipot; (2) canister; (3) boat; (4) Mex. ore-bucket (Dwight), *see* tonel (2).

**BOTELLA**, (1) bottle, flask; **una b. de azogue**, one flask of quicksilver, *see* frasco; (2) **botellas**, bell-pits (Molina), *syn.* **grandes cámaras**.

**BOTILLA** (dim. of **bota**), **b. de burro**, Mex. a sack or bag of neat hide, and worked by a burro (3) or hand-whim; **b. de lomo**, a small sack made of one-third of a hide to carry water out of small sinkings on men's backs (M. J. Gloss.), *see* **bota**, **saco** (1), **soguilla**.

**BOTILLEROS**, men who carry *botillas*.

**BOTIQUÍN**, travelling medicine-chest.

**BOTÓN**, (1) crank-pin, *syn.* *b. de manubrio* (3), *turrión* (2); (2) carp. dowel; (3) knob or handle of doors, locks, etc.

**BOTRITES**, burnt cadmia which adheres to the upper part of a furnace (*Velázquez*), *see* *cadmia* (2).

**BÓVEDA**, (1) cave or cavern, *see* *cueva* (1); (2) a chamber-deposit, *see* *clavo* (2), *u. criadero* (2), *salón* (1); chloride of silver sometimes occurs in *cámaras abovedadas* (*Dahlgren*); (3) extended arch or vault of masonry (*see* *arco*); arch of a furnace; (4) *b. de madera*, timbering of an oval-shaped gallery formed either of a number of short logs with their axes generally at right-angles to the excavations, or of longer ones parallel to the same, *syn.* *armadura* (1) *en bóveda*, equiv. *Fr. vouûte en bois*.

**BOVEDAL**, *see* *criadero* (2).

**BOVEDÓN**, Peru, (1) a chamber-deposit, *see* *salón* (1); (2) enormous cavity left in working (1), *see* *salón* (2).

**BOYA**, Cerro de Pasco, Peru, rich vein or pocket of ore, a *bonanza*: "During the *boyas* the labourers receive, instead of their wages in money, a share of the ore" (*Tschudi*, 1847); *see* *huachacas*, *maquipuros*.

**BOYERO**, ox-driver.

**BRACERA**, *see* *u. sierra* (2).

**BRAGUERO**, *see* *u. serrucho*.

**BRAGUETILLA**, Peru, smelting-furnace; the simplest being merely a hole in the ground (*Dwight*), *see* *horno* (2).

**BRAMANTE**, pack-thread, *see* *u. hilo* (4); strong thread made of hemp [*see* *u. chimenea* (4)]; thin hempen rope, *comp.* *cordel* (2).

**BRASA**, (1) red-hot coal, etc., *see* *ascua*; (2) Almaden, Sp. met. the distillation of the mercury by the combustion of the sulphur in the ore, forming the second stage of the process, when firing is discontinued (*Schnabel*).

**BRASCA**, met. *brasque*, a mixture of charcoal powder and damped refractory earth which is rammed down (*apisonado*) in the bottom [*reposadero* (3)] of the crucible of a blast-furnace with iron tools called *espetones* (2) (*Ramirez*); in tin-smelting, *brasca* is made of four parts of charcoal powder to one of clay.

**BRASERO**, (1) brazier, firepan; (2) Mex. hearth, fireplace, *see* *hogar* (1).

**BRAUNA**, *see* *u. candeia*.

**BRAVO**, *see* *u. cobija* (2).

**BRAZA**, a fathom; Arg. = 1·894 yards, Brazil = 2·437 yards, Port. = 1·853 yards (*Spon*); in Zac. Mex. = 2 *varas* × 4 *varas* × 1 *vara*.

**BRAZO** (arm), (1) arm of a lever, arm of a bobbin [*see* *aspa* (6)], etc., beam of a balance [*see* *astial* (2)]; (2) pump. set-off, *see* *bomba* (1); (3) jib of a crane, *see* *aguilón*; (4) *brazos*, hands (labour).

**BRAZUELAS**, Mex. cogs of the master-wheel (*Lyon*, 1828), *comp.* *dientes* (1).

**BREA**, (1) pitch or tar ; (2) sackcloth ; (3) a hydrocarbon, a variety of asphaltum (*asfalto*) ; *brea mineral* is a brown viscous natural oil ; *laguna de la brea*, the celebrated Pitch Lake of Trinidad, *see betún*.

**BRECHA**, (1) ball of pebbles ; (2) geol. breccia, *syn.* *piedras conglutinadas*, *see canga* (*tapanhoacanga*), *fraileasca*, *güedales* ; (3) Ant. Col. a trench or cutting made in search of a lode, *see zanja* (1) ; (4) Ant. Col. alluv. m. small channels by which the pay-gravel is led to the ground-sluice [*canalón* (2)] from the different cuts [*tajos* (5)] of a clean-up [*barredura* (1)] (*Uribe*) ; (5) Ant. Col. the open trench or cutting leading to the mouth of an adit, day-level or tunnel, *comp.* *zanja* (1).

**BRELHO**, Port. pebble, small stone, *see guija* (1).

**BRIDA**, (1) bridle or reins of a bridle ; (2) rail. fish-plate, *see eclisa* ; *brida-escuadras*, *cojinete-bridas*, broad chair for double bridge-rails acting as fish-plates (*Molina*) ; (3) flange, *see reborde* ; (4) *bridas*, iron rings or sleeves sometimes used for forming joints of tubes for lining boreholes, *syn.* *mangas* (9), *manguetas* (2), *manguillas*, *manguitos* (1).

**BRIGADO DE SOCORRO**, ambulance corps.

**BRILLANTE**, adj., for *ulla brillante*, *see u. ulla*.

**BRILLANTE**, brilliant, a diamond cut in triangular faces.

**BRILLO**, lustre.

**BROCA**, (1) bit, carpenter's bit ; conical bit for drilling metals ; (2) *b. de un cincel*, bor. boring-bit, *see bisel* (2).

**BROCAL**, (1) timb. upper-, surface- or day-frame (*Fr. cadre à oreilles*), *see Fig. 18* ; (2) first shaft-frame or (*Cornw.*) collar ; (3) *b. del tiro*, mouth or eye of the shaft, brace ; *b. del pozo* (1), well-curb or curbstone, mouth of the well, *see boca* (2).

**BROCATEL**, *marmol b.*, marble having spots and veins of various colours.

**BROCEADOR**, *see u. manto* (1).

**BROCEO**, Chile, sterility (of a deposit), *see u. manto* (1) ; *en broceo* = *en borrasca*.

**BRONCE**, (1) bronze ; *b. de aluminio*, aluminium bronze ; *b. fosforado*, phosphor bronze, *see u. campanil*, adj. ; brass, *see metal* (2) ; (2) cast-iron, *see u. hierro* (1) ; (3) any mineral like bronze or brass in appearance, *e.g.*, (*a*) ordinary iron pyrites, *syn.* *b. amarillo* (1), *b. apretado*, *b. blanco* (1), *b. chino* (1), Guan. Mex. *b. malo* ; (*b*) *b. bruno*, Zac. Mex. iron pyrites, having the colour of polished bronze, it is highly argentiferous, containing up to 12 or 15 marcos of silver per quintal ; *b. bueno*, Guan. Mex., *b. platero*, silver-bearing pyrite, *see plata* (2) ; (*c*) Peru, auriferous pyrite, *see oro* ; (*d*) *bronces*, Peru, ores found below the *pacos*, and so called from the presence in them of iron and copper pyrites, the first is more abundant than the second, the ore being rich in silver according to the proportion that it bears of the latter (*Fuchs and De Launay*), *see pacos*, *pavonado* (2), *plata* (2), *u. verde*, adj. ; (*e*) *b. blanco* (2), Potosí, Bol. and Mex. *mispickel* ; (*f*) *mina de b.*, bell-

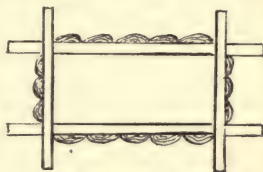


FIG. 18.—Brocal (1).



- metal ore, *syn.* *pirita de estaño* ; (g) *b. amarillo* (2) or *nochistle* (2), *b. chino* (2), *b. de cobre*, *b. dorado*, copper pyrites, *see u. pirita* ; (h) *b. añilado*, Peru, covellite or indigo copper (CuS) ; (i) *b. plateado*, Chile, sub-sulphide of copper (ore) ; (j) *b. morado*, bornite.
- BRONCO**, Mex., wild, loose ; roof-rock liable to fall (Dwight).
- BRONQUEAR**, Mex. to hammer or pry with a hammer or gad in rock which is loose and liable to fall (Dwight).
- BRONZADO, DA**, adj. Peru, containing bronzes (3) (*d*).
- BROTAR**, to issue (of a spring, *see manar*) ; to crop out (of a vein, *see aflorar*).
- BROTAZÓN DE VETA**, Mex. apex of vein ; croppings (Dwight), *see afloramiento*.
- BROZA**, (1) centre-bit, *syn.* *barrena* (1) *de guía* or *guía* (16) ; *fierros de b.*, drills for centre-bit ; (2) Batopilas, Chih. Mex. native silver disseminated in thick leaves ; the ore consists of one-third calcite and two-thirds native silver, while *chispeada* is two-thirds calcite and one-third silver (Dahlgren), *see plata* (2) ; (3) Mex. stones or ore of the size of an egg or apple, *syn.* *gabarro* ; (4) Chile, waste, rubbish, *see desecho* (3) ; (5) Peru, very poor (silver or copper) ores which generally do not repay extraction (Dwight), *see desecho* (4), *plata* (2) ; *mineral de b.*, ores for the *beneficio* as distinguished from ores for exportation ; (6) vein-matter, gangue, matrix (Ponce de León), *see matriz* (1) ; (7) thicket, brushwood, on mountains (Velázquez).
- BRUJA**, *see u. arena* (1).
- BRÚJULA**, (1) compass needle, *syn.* *aguja* (3), *calamita* (2) ; (2) compass or miner's dial, *syn.* *aguja* (8), *compás* (2) ; *b. colgada* or *minera*, hanging compass or German dial, *see muletila*, *transportador*.
- BRUÑIDOS**, *see u. cincel* (2).
- BRUNO, NA**, adj. of a dark brown colour ; *bruno esparto*, brown spar or rhomb spar, a variety of dolomite.
- BRUTO, TA**, adj. coarse, unpolished ; *diamante en bruto*, rough diamond ; for *piedra bruta*, *see borrasca* (2), for *plata bruta*, *see u. plata* (1).
- BUCHE**, Col. belly of ore, equiv. Fr. *ventre*, *see ensanchamiento*.
- BUENO !** (*bu-e-e-e-no !*) call in shaft up to 200 feet deep, when kibble or other vessel has reached the bottom, *comp. oye !*
- BUEY**, (1) ox or bullock ; (2) *buey de agua*, approximate hydraulic measure, used in some localities for estimating the volume of water that passes along a ditch, or that gushes from a spring, when the quantity is large (Acad.).
- BUFA**, Mex. (1) the crown of a precipice or cliff (*acantilado*) which is of some extension (Bárcena) ; a narrow ridge of rock, standing above the general surface, the sides being very steep. The *bufas* of Guanajuato are formed of rhyolite and rhyolitic tufa, those of Zacatecas of rhyolite, *comp. sombrerete* (1) ; (2) Mazapil, Zac. brown iron ore and malachite occur in deposits called *bufas* or *rebosaderos* (3) (Ramirez).
- BUFADOR**, c.m. a blower or sudden outburst of gas.

**BUFARSE**, c.m. to swell up (of the floor of a level)—the effect being known as creep (S. Wales), heave or pucking.

**BUGRE**, *see* **bolinete**.

**BITRÓN** (trap, net or snare), (1) a furnace formerly used in the Almaden mine for reducing mercury ores (Le Play); Span. Am. low blast-furnace (**horno de manga**) for smelting silver ores, *see* **horno** (2); (2) Mex. fire-box (Dwight), hearth [*see* **hogar** (2)]; met. ashpit (**cenicero**) (Acad.); (3) sand-bath furnace (Ponce de León); (4) Bol. Peru, amalgama ing circle or **patio**, *see* **cerco** (4).

**BUJE**, axle-box, bush-box, iron ring; pillow of a shaft [**eje** (2)], collar of a shaft (Ponce de León).

**BUJIA**, (1) wax candle, *see* **u. vela** (2); (2) candlestick in which (1) is put; (3) candle-power; in France stearine candles of five to the pound are used, the consumption being 9.6 grammes per hour; in England sperm candles are used, equivalent to 0.9 of the stearine candle (Penot), *see* **vela** (2).

**BULTO**, com. package, parcel.

**BUNGO**, Nicar. flat boat, about 40 by 9 feet (Velázquez), *see* **u. bongo**.

**BUQUE**, (1) ship; (2) Mex. boy employed in a mine (Dwight), *see* **abajador**.

**BURACO**, Port. (1) hole, cavity or cavern, *see* **cueva** (1); (2) Braz. bore-hole; **b. d'agua**, water-hole (lower borehole in a drift); **b. en secco**, upper do., *see* **barreno** (1).

**BURBUJA**, bubble; bleb; blister.

**BURBUSEO**, *see* **barequeo**.

**BURBUSERO**, *see* **barequero**.

**BURGA**, prov. hot spring of mineral waters, *see* **manantial**.

**BURIL** (engraver's burin), **buriles**, the burins or toothed tools of a Blanzý excavator (Molina), equiv. Fr. **traceuse**; *see* **burilada**.

**BURILADA**, assay. sample chip from silver, taken with a burin (**buril**), to test it by the standard (**parragón**).

**BURNONITA**, bournonite or wheel ore (Ger. **Schwarzspießglanzerz**).

**BURO**, prov. (1) chalk, *see* **creta**; (2) marl. *see* **marga** (1).

**BURRADA**, (1) Mex. a jackass (Lyon, 1828); (2) drove of asses.

**BURREAR**, Espiel and Belmez mines, Sp. to carry ore, etc., on the shoulder; *see* **u. costilla**.

**BURRERO**, Mex. donkey-boy (Dwight).

**BURRO**, (1) ass; (2) jack or horse of sawyers, *syn.* **aserradero** (2), **b. para aserrar**, **caballete** (1), **caballo** (2), **camillón**, *comp.* **tijera** (1); (3) hand-whim or windlass, *see* **torno** (2); (4) Ant. Col. the frame supporting the axle [**principal** (2)] of a water-wheel, or the axle of a native mill. The frame consists of the crown-piece [**cabeza** (4)], two legs [**patas** (1) or **columnas** (4)], and the ground-sill [**banco** (4) **de tierra**], into which the legs are mortised. (5) Col. one cubic **vara** of firewood (**leña**), 30 cubic feet or .85 cubic metre, *see* **u. cuerda** (5); (6) Bilbao, Sp. the standard of a wire ropeway, *see* **caballete** (5); (7) Col. alluv. m. in river bar-washing, stones thrown back up stream by women, and forming the

three sides of a rectangle. The *bateas* are washed over the *burro* (C. Bullman).

**BUSCA** (search), (1) Mex. the right to employ *buscones* (1); it is frequently claimed by the administration and persons employed in mines (M. J. Gloss.); (2) *buscas*, Mex. ore taken out by *buscones* (1); (3) *paradas de b.*, *see u. parada* (1); (4) *b. y descubrimiento de los criaderos*, search and discovery of mineral deposits.

**BUSCADOR**, *searcher for gold or other ore*; *b. de oro*, prospector, *see cateador*, *comp. buscones* (1).

**BUSCAR**, to search for mines, etc., to prospect, *see catear*.

**BUSCONEROS**, *see buscones* (1), *u. señorial*.

**BUSCONES**, Mex. (1) searchers or explorers; those who search for ore in abandoned mines, or who give notice of it in order to claim a reward (Gamboa, 1761), *syn. Peru, busconeros*, Mex. *poquiteros*, *comp. barequero, buscador, cateador, catero, faiscador, gambucino* (1), *garimpeiro* (1), *mazamorrero, raspadores, rebotaleros, rumbeadores*, *see rascar*; (2) tributers or miners who work on part proceeds (M. J. Gloss.), *see campista*.

**BUZAMIENTO**, inclination or dip, *see echado*.

**BUZAR**, to dip, *see hundirse* (3).

**BUZO**, diver. In Cauca and Antioquia, Col. a class of divers (*mineros-buzos*) get alluvial gold from the bottom of rivers with *bateas*. Some are provided with a diving-dress (*escafrando*), *comp. mergulhaçr, u. trincho* (2).

**BUZÓN**, (1) lid or cover of cisterns, etc., *comp. tapa* (1); (2) in foundries, hooks to take off the lids of melting-pots (Velázquez); (3) sluice of a water-course at a mill, *see esclusa*; (4) funnel-shaped opening of a hopper (Molina), *see tolva* (1); (5) winze, *see clavada*; (6) S. Sp. subsidence in upper workings produced by a funnel-shaped cave of ground below (Molina), *see revenimiento*.

**CABALGADURA**, (1) baggage-horse or cargo-mule, beast of burden, *see caballo* (1), *comp. caballería* (1); (2) saddle-beast, *see caballería* (1).

**CABALGARES**, Chile, belonging to horses.

**CABALLERANGOS**, horse-keepers.

**CABALLERÍA**, (1) saddle-horse or mule, riding-beast, *syn. montura* (1), *see caballo* (1), *cabalgadura* (2), *comp. cabalgadura* (1); (2) land measure equal to 60 fanegas or 3863 áreas; *c. de tierra*, Cuba, 1343 áreas, or 33.3 acres; Puerto Rico, 7858 áreas; (3) cobalt glance (Ponce de León), or smaltite (Ger. *Glanzkobalt*).

**CABALLERO**, spoil-bank, *see vaciadero*.

**CABALLETE**, (1) jack, horse, trestle or frame of sawyers, *syn. c. de aserrador, c. de aserrar*, *see burro* (2); (2) ridge of a house, ridge-beam, rafter, *syn. asna, costanera*; (3) *c. de chimenea*, chimney-top, cowl, *syn. caperuza* (2); (4) support or saddle of the one-rail system of transport; (5) the standard of a wire ropeway, *syn. Bilbao, Sp. burro*



(6), column (9), pie (7) derecho ; (6) c. de tensión, Mex. tension-station of cable tram (Dwight) ; (7) bor. shear-legs, tower, derrick, *syn.* *cabria*, *castillete*, *torre*, *trucha*, equiv. Fr. *chevalement*, Ger. *Bohrgerüst*, *see* *soporte* (2) ; (8) c. de molinete, frame of the windlass, *see* *soporte* (2) ; (9) Mex. horse of rock ; in wide veins *caballetes* are beds of sterile matter separating the bands [cintas (2)] of ore, *syn.* *tabiques* (2), *see* *caballo* (5) ; (10) *see u. puente* (1).

**CABALLITO**, (1) nag or pony ; (2) *caballitos*, Guan. Mex. men who formerly carried the mine captains or others underground in a saddle fixed to the shoulders, *see u. mandón*, *comp. carguero* (1).

**CABALLO**, (1) horse, c. de silla, saddle-horse, *see* *caballería* (1) ; c. de carga, packhorse, *see* *cabalgadura* (1) ; (2) jack or horse of sawyers, *see* *burro* (2) ; (3) the horse or thick piece of wood at the end of a rope by which men ascend and descend shafts, *syn.* *amigo*, *comp. barzón* ; Mex. a kind of lasso in the form of a sling by which men descend or ascend shafts one below the other, *see* *bajada* (1), *u. mandón* ; (4) c.m. the horse or horseback sometimes replacing portions of coal-seams, or mass of rock intercalated with same, parting, equiv. Fr. *laye*, Ger. *Bergmittel*, *see* *nervio* (2) ; (5) m.m. the horse, (N. Engl.) rider or mass of country sometimes occupying portions of a lode, or splitting it into two or more branches, *syn.* Mex. *caballete* (9), *cuña* (2), Mex. *tabique* (2), equiv. Fr. *coin*, Ger. *Gebirgskeil* ; c. de tepetate, Mex. (*syn.* Ant. Col. c. de Peña) mass of "country" or barren rock in a lode or vein, *see u. meter*, *comp. banco* (3), *puerta* (5) ; (6) *caballos de piedra*, Amolanas, Chile, basalt intrusions in quartz-porphry, barren of ore (copper), but which may be regarded as the true ore-carriers (A. Endter) ; (7) Mex. miner's candlestick (Dwight), *see* *candeleja* ; (8) Mex. cross-course (Dwight), *see* *crucero* (2) ; (9) Ant. Col. alluv. m. crossed poles, driven into the bed of a river, and united by beams and battens, with the object of diminishing the force of the current so as to produce smooth water in order to allow the divers (*buzos mineros*) to descend to the bottom (Uribe) ; it is a sort of coffer-dam [*represa* (1) *encofrada*], *see u. tapón* ; (10) grinding-stone of an arrastre, *see* *voladora* (3) ; (11) c. de vapor, horse-power, or the force necessary to raise 75 kilogrammes 1 metre in 1 second, equiv. Fr. *cheval-vapeur*, Ger. *Pferdekraft* ; *caballo hora*, h.p. per hour, *see u. fuerza*.

**CABECEADERO**, (1) timb. hitch made for the head [*cabeza* (1)] of a stemple (*estemple*), *comp. huida* (2) ; (2) *see u. arranque* (2), and *fundamentales*.

**CABECLEAR**, (1) timb. to make a hitch, *see* *cabeceadero* (1).

**CABECEDO**, Mex. obs. end-line of claim (Dwight).

**CABECEIRA**, (1) Braz. horizontal portion of the sluice [*canoa* (2)] used by river-washers (Calogeras), *comp. bica* ; (2) Ouro Preto, Braz. level or heading (J. L. Tonkin), *see* *galería* (1).

**CABECERA**, (1) head-waters, source of a river ; (2) capital of a province, district or nation, *see* *cabeza* (11) ; (3) summit (*cima*) of a hill or ridge ;

(4) **de cabecera**, across the vein, *see u. hilo* (1); (5) heads of copper-plates, etc., **c. de canalón** (2), Ant. Col. the highest or richest part of the ground-slucice, *comp. cola* (6); (6) blast. chief of a pare or gang of drillers (Acad.), *see u. parada* (3).

**CABECERO**, lintel, *see dintel*.

**CABECIL**, Sant. Sp. timb. cap-piece, *see capa* (2).

**CABECILLA**, Mex. (1) ore coarser than the **lama** (2), and which is re-ground or treated in a bath of molten lead; **polvillo** (3) is treated in the same way. **Cabecilla** is used for filling up the small interstices of the arrastre bed, when grinding gold ores, which serve to collect the amalgam, and are termed therefore **criaderos** (5) (Ramirez). (2) In the **patio** process, the residue after washing the **torta**, *see u. relave*.

**CABEZA** (head), (1) timb. upper end or head of a stull (**estemple**), *comp. culata* (3); (2) end of the driving-beam or sweep [**espeque** (1)] of a horse-whim, etc., to which the mules are attached; (3) mech. head, **c. en cruz**, cross-head, *syn. c. en T*; (4) Mex. outerop, *see crestón*; (5) boss of a stamp-head, *see calzadura* (2); (6) **trabajo de c.**, overhand stoping, *see u. testera* (3) and **trabajo**; (7) **c. de la sonda**, bor. stirrup or temper screw, *syn. estribo* (3), equiv. Fr. *tête de sonde à vis*, Ger. *Stellschraube*; (8) **c. de ingenio**, Peru, shaft of a vertical water-wheel (Dwight), *see eje* (2); (9) Ant. Col. upper extremity of a placer mine, *comp. cola* (5); (10) the principal town of a province, district, etc., *syn. c. de partido*, *see cabecera* (2); (11) diameter of a column (Velázquez); (12) **c. de la silla**, Mex. pommel of a saddle (Velázquez); (13) **c. de monte** or **sierra**, top of a mountain, *see cima*; (14) **c. de mina**, entrance (**entrada**) or mouth [**boca** (2)] of a mine (Ponce de León); (15) **cable de c.**, undergr. haul. main rope, *see u. cable* (1); (16) **aguas de c.**, *see u. agua* (4).

**CABEZADA**, (1) the most elevated part of any land, territory or region; (2) Mex. timb. end-piece, *see crucero* (3).

**CABEZAL**, (1) Zac. Mex. timb. end-piece of a shaft-frame, *see crucero* (3); (2) Zac. Mex. timb. cap-piece, *see capa* (4); (3) Pachuca, Hid. Mex. timb. upper wall-plate of the shaft-frame of an inclined shaft, *see largueros* (2); (4) Ant. Col. crown-piece, *see u. burro* (4); (5) Ant. Col. the cross-tie of a trestle aqueduct [**mampuesto** (3)]; (6) **c. de choque**, rail. buffer-block (Ponce de León); (7) lintel, *see dintel*; (8) *see u. ensamblad.c.*

**CABEZO**, summit of a hill, *see cima*.

**CABEZÓN**, Ant. Col. (1) the point at which a current of water loses its velocity and deposits the material it carries (Uribe); (2) part of a river forming an inclined plane down which the water runs rapidly (Uribe); rapids (**raudales**).

**CABEZOTE**, rubble stone, small ashlar (Ponce de León), *see mampuesto* (1).

**CABEZUELA**, (1) San Dimas, Dur. Mex. concentrates rich in gold and silver, *comp. marmaja* (2); (2) Mex. mineral crushed to less than one-quarter of an inch in diameter (Dwight), *comp. u. granza* (1)

**CABILLA**, (1) *c. de la cigüeña*, crank-pin (Ponce de León), *see* botón (2); *hierro c.*, round bar-iron thicker than *varilla* (6) (Acad.).

**CABILLÓN**, step of a ladder (Ponce de León), *see* escalón (1).

**CABIO**, (1) flooring-joint, *see* can (1), *u.* viga; (2) *see* cabrios.

**CABÍO**, lintel of a door, *see* dintel.

**CABLE**, (1) cable, rope, *see* cabo (2), cuerda (1), gúmena, sogá, tiro (8); (a) *cables metálicos*, ropes made of metal (iron or steel), (b) *cables vegetales*, ropes made of vegetable material, as *cañamo*, *esparto*, (c) *cables de cuero*, *see* reja (3); *c. aéreo*, *see* *u.* vía (3); *c. ajustado*, locked coil wire-rope; *c. cilíndrico*, round rope; *c. cónico*, conical rope; *c. de alambre*, wire-rope; *c. de cabeza* (15); main rope (Fr. *câble-tête*); *c. de cola* (11), tail-rope (Fr. *câble-queue*); *c. de extracción*, hoisting rope; *c. de porte*, Mex. carrying rope; *c. de tracción, de motor, móvil*, haulage rope, travelling rope; *c. empatado*, spliced rope; *c. plano*, flat rope; *c. plano de sección decreciente*, flat rope made of conical strands; *c. rastrero*, haulage rope; *c. rastrero discontinuo*, main- and tail-rope system (Fr. *système corde-tête et corde-queue*); *c. rastrero sin fin*, endless-rope system (Fr. *cable sans fin*); (2) *c. eléctrico*, electric cable or wires; (3) cablegram, *see* cablegrama.

**CABLEAR**, to cable.

**CABLEGRAMA**, cablegram, *syn.* cable (3). NOTE.—“These two words are really barbarisms, and have not received official sanction” (Velázquez).

**CABO**, (1) helve or handle, *see* astil (1); (2) small rope or cord, *see* cuerda (1); (3) Mex. boss or foreman; *cabo de minas*, Peru, head foreman, *see* capataz (3); (4) Mex. stump of a candle [*vela* (2)] (Dwight); (5) *c. de pisón*, Ant. Col. wooden stem or lifter of a stamp, *see* mango (2); (6) *bomba de c.*, pump. drawing-lift or bucket-pump, *see* *u.* bomba (1); (7) forebreast, *see* frontón (1).

**CABOTAJE**, coasting trade; Chile, remittances of metal sent by sea or land from one place to another in the country (*i.e.*, not exported).

**CABRESTANTE**, capstan or vertical windlass, *syn.* argüe, *see* *u.* malacate (2), *comp.* torno (2).

**CABRIA**, (1) axle-tree, *see* torno (1); (2) windlass, *see* torno (2); (3) *bor.* shear-legs, *see* caballete (7).

**CABRIAL**, (1) obs. beam, *see* viga; (2) charter (Ponce de León).

**CABRIOS**, **CABRIOLES**, *b. constr.* inside rafters of a roof, *syn.* cabics (2), *contrapares*, *see* viga, *comp.* correa (4), par (1).

**CABRIÓN**, rail. chock, wedge, skid (Ponce de León).

**CABUJÓN**, rough unpolished ruby (Velázquez), *see* rubí (1).

**CABULLA** (or *cabuya*), Span. Am. (1) American aloe, *see* agave (1); (2) fibre of (1) or sisal hemp, *syn.* henequén (2), *comp.* abacá (2); (3) cord [*cuerda* (1)] or rope made of (2); in Mexico *cabuya* is used in making *cinchones* (for cargoes), *cinchas* (for tying *enjalmas*), lassoes, etc. The *cinchón* and the rope attached to it is called *sobrecarga*; (4) *dar c.*, S. Am. to tie (*amarrar*).



- CACAXTLE**, Mex. wooden frames for carrying things on the shoulders (Acad.).
- CACAXTLERO**, Mex. Indian who carries merchandise, etc., in *cacaxtles* (Acad.).
- CACERÓN**, *see casarón*.
- CACHANI**! *see abajo*!
- CACHETEAR**, Mex. to loosen a gad by striking it alternately on each side (Dwight).
- CACHÍ**, (1) Potosí, Bol. chalybite, siderite or spathic iron, *see siderosa*; it occurs in crystals, needles, etc., and sometimes augurs well for the presence of rich fahlerz (M. Roberts); (2) Peru, a "quechua" word, meaning salt; also applied to all kinds of white gangue rocks (Dwight); a kind of alabaster (Ponce de León); Chañarcillo, Chile, white calcareous spar—a bed of this, a few inches thick, occurs in the third limestone (Henwood).
- CACHIMBA**, Sinal. Mex. miner's oil-lamp, *see candil*. NOTE.—Cuba, a smoking pipe (Velázquez).
- CACHO**, (Span. Am. horn), Ant. Col. (1) a piece of horn in which the alluvial miners (*lavadores*) collect the gold; (2) *cachos*, a pair of convex tools of wood, 9 to 10 inches long, and about 5 inches wide; with these the alluvial miner, holding one in each hand, extracts sand, earth, and small stones from the alluvion, ditches, etc., *syn. c. de bateador*, *see pañar*; (3) *mina de c.*, a placer in which the stones are sufficiently small to be extracted by hand, or in *cachos* (2).
- CACHOEIRA**, Port. waterfall, *see salto* (3).
- CACHORROS**, Peru, blast. small drills, used together with wedges, in bringing down the vein in the operation known as *llauca*, *see barrena* (2).
- CACHUCHA**, Mex. miner's cap (Dwight), *see vestido*.
- CACHUCO**, Peru and Chile, a wrought-iron tank, 20 feet long, 6 feet wide, and 6 feet high, in which *caliche* (1) was evaporated directly by steam—the dissolved liquid passed to the *chullador*, *see estanque* (3).
- CACHUPÍN**, *see gachupín*.
- CACIQUE**, (1) name given to aboriginal American chief, prince, or nobleman; (2) *caciques*, human figures made of burnt clay or gold found in the Indian *guacas* (1).
- CACO**, Braz. a white and sugary quartz (*cuarzo*); at Morro Velho mine "an exceedingly hard, jaspery mixture of carbonate and quartz, banded black and white, and comparatively free from sulphides, which envelops the mass of structureless ore" (O. A. Derby).
- CADENA**, (Port. *cadeia*), (1) chain; *c. de enganche*, coupling chain, *c. flotante*, *c. sin fin*, endless chain (Fr. *chaîne flotante*); (2) *cadeias*, Mex. pump-rods, *see tirante* (3); (3) any jointed frame for supporting the lining of a well, etc.; *cadenas*, Zac. Fresnillo and Pachuca, Mex. timb. pieces which are set vertically in order to sustain frames [*anillos* (3)] interrupted in plats and in re-timbering old workings (Luis Carrión), *syn. Guan. puntales* (5); (4) *c. de montañas* (Port. *cadeia de montanhas*), chain of mountains, *see cordillera* (6); (5) *see suppl.*; (6) *c. de cangilones*

(2), chain-pump, *see* **bomba** (1); (7) boom of floating timber in rivers, etc.; (8) mortise (Velázquez), *see* **muesca** (1); (9) buttress of hewn stone (**sillería**) for strengthening a wall, *see* **contrafuerte** (1); (10) **c. de rocas**, ledge or ridge of rocks.

**CADENERO**, surv. chainman.

**CADINHO**, Braz. crucible, etc., *see* **crisol** (1).

**CADMIA**, (1) electric calamine, *see* **calamina** (1); (2) tutty, impure oxide of zinc, collected from a furnace, or a crucible (Velázquez), *see* **botrites**.

**CADO**, top. deep bend of a river (Ponce de León).

**CADOSO**, top. deep part of a river, where the water is stagnant (Acad.), *see* **remanso**.

**CADUCACIÓN**, expiration of rights in a claim, etc., by lapse of time.

**CADUCAR**, Mex. to forfeit a title through non-compliance with the stipulations contained therein (Dwight).

**CADUCIDAD**, Mex. the act of forfeiting a title, loss of mining property. In Mexico the default of payment of the tax constitutes the only loss.

**CAER DE CRUZ**, Mex. the beginning of the action of the quicksilver in the process of amalgamation (Dwight).

**CAGAFIERRO**, scoria, dross of iron, *syn.* **moco** (1), *see* **escoria** (2).

**CAGÜI**, Ant. Col. large tree, the wood of which is used for timbering shafts, etc.

**CAÍDA**, (1) fall or lift of a hammer, *see* **carrera** (5); gold mill. drop (of stamps), *syn.* **golpe** (4); (2) **caída libre**, *see* **junta** (5); (3) waterfall, *see* **salto** (3); (4) head of water (Lucas), *see u.* **altura**; (5) geol. landslide, *see* **derrumbe** (2).

**CAÍDOS**, Mex. ground that has fallen, or has caved in, a "run," *see* **derrumbe** (1).

**CAILLAPOS**, Hualgáyoc, Peru, timb. polings used in lagging from 3 m. in length and 0.1 m. in diameter (Santolalla), *see* **revestimiento**; are used also for covering stulls.

**CAIMÁN** (alligator), (1) Sinal. Mex. shoot for ore, *see* **paso** (2); (2) Mex. mech. stilson wrench (Dwight); (3) **caimán-rana**, *see u.* **suiche**.

**CAJA** (box or case), (1) body of a wheelbarrow, etc., *see* **cajón** (1); (2) wooden cistern (*see u.* **achichador**), any cistern or tank, *see* **estanque** (3); (3) **c. de agua**, sump, well or lodge at the bottom of shaft, *syn.* **caja del tiro**, **cámara** (10) **de agua**, **depósito** (2) **para agua**, **plán** (3) **del tiro**, **recipiente**, **sumidero**, Peru, **tintero**, Almaden, Sp. **torno** (5), equiv. Fr. **puisard**, Ger. **Gesenk**, **Sumpf**, *see* **caldera** (5), **campana** (3), **pocillo** (3); (4) **c. de válvula**, pump. door-piece of a drawing-lift, clack-piece, *syn.* **cámara** (6), **capilla**, *see* **registro** (4), *see* **bomba** (1); **c. de distribución**, valve-chest, *see* **distribuidor** (3); (5) **c. de estopas**, stuffing-box of a plunger-pump, *syn.* **prensaestopas**, *see* **bomba** (1) *u.* **capillo**; (6) hoist. bucket or kibble, *see* **tonel** (2); **c. de agua con válvulas**, water-barrel; (7) **c. de extracción**, hoist. cage, *see* **jaula** (3); **cajas guiadas**, cages in guides (8) **c. de sebo** or **grasa**, transp. grease-box of a wagon; **c. de aceite**, oil-

box, oil-cup ; **c. de compresión**, dash-pot (Fr. *boite à compression*) ; (9) **c. del pozo**, Cataluña, Sp. cutting-ring, *see* **corona** (2) ; (10) Mex. housing of crusher (Dwight) ; (11) Mex. met. water-jacket ; **c. chica**, furnace-tap jacket ; **c. fundida** or **quemada**, burnt-out furnace-jacket (Dwight) ; (12) *see* **mechinales** (2) ; (13) wall of a vein, *see* **respaldo** ; (14) encasement of a deposit, its entire filling or width between walls or between roof and floor (Molina), *see* **relleno** (4) ; (15) **c. del criadero**, **roca de c.**, "country rock," *see* **roca** (4) ; (16) **c. real**, treasury (**tesorería**) ; **Cajas Provinciales**, Mex. obs. Provincial Treasuries, the King's Fifth (**quinto**) was paid into these ; (17) **c. de musgo**, moss-box of Kind and Chaudron's system of tubbing ; (18) **c. de limpia**, Huitzucó, Guerr. Mex. low-grade quicksilver ores packed underground, and walled round with deads (**tecoral**), *see u.* **limpia** (2) ; (19) cash ; **libro de c.**, cash-book ; (20) **c. de aire**, **c. de ventilación**, vent. air-box or pipe, (Derb) fang, *see* **huaira** (2), *comp.* **caño** (2) ; (21) **c. alemán**, mech. prep. German chest, a kind of buddle, *see* **cajón** (5) ; any kind of strake or tye ; (22) **c. de fuego**, st. eng. firebox, *see* **hogar** (2) ; (23) **c. de rueda**, bucket (of a water-wheel), *see* **aguador** (3), *comp.* **cangilón** (2) ; (24) **c. de vapor**, steam dome (Ponce de León), *see u.* **cúpula** ; (25) mortise, *see* **muesca** (1) ; (26) case of a balance [**balanza** (3)] or steelyard [**romana** (1)] in which the needle or pivot (**fiel**) enters when the weight is in equilibrium (Acad.), *syn.* **alcoba**.

**CAJERA**, mech. socket, journal bearing (Dwight), *see* **chumacera**.

**CAJERO**, cashier, cash-keeper.

**CAJETE**, Mex. walled receiver for the ground slimes, *see* **lamero** (3).

**CAJÓN** (box or chest), (1) body of a wheelbarrow [**carreta** (2)], wagon [**carro** (2)], etc., *syn.* **caja** (1), *see* **cama** (1) ; (2) hand-barrow, *see* **carreta** (2) ; (3) mech. prep. hutch of a jigger (*see* **tinanco**), mortar of a stamp ; (4) **c. de punta**, mech. prep. pointed box ; (5) **c. alemán**, **c. cernidor** (2), mech. prep. German buddle, *syn.* **caja** (21), **lavadero de c.**, Ant. Col. **molino** (3) ; in patio process, a rectangular box  $3\frac{1}{2}$  m. long, 0.65 m. wide, and 0.25 m. deep for washing the scrapings (**raspaduras**) from an **arrastre** (Ramírez) ; (6) **c. inclinado**, mech. prep. inclined table ; (7) **c. de granza**, Mex. a pit to receive crushed ore (Lyon) ; (8) **c. eng. crib**, caisson (Velázquez) ; (9) a measure of ore ; in Bolivia 50 **quintales**, in Peru 60 q., in Chile 64 q. One **marco** of gold per **cajón** of ore = 2 ozs. 14 dwts. 10 grns. per ton. (10) **Veta de c.**, Ant. Col. a more or less vertical lode or one that dips from  $45^\circ$  to  $90^\circ$  ; (11) Zac. Fresnillo and Pachuca, Mex. the first portion (**tramo**) of timbering sustaining the walls of a shaft, *comp.* **forro** (2) ; (12) Mex. dry-goods store ; (13)

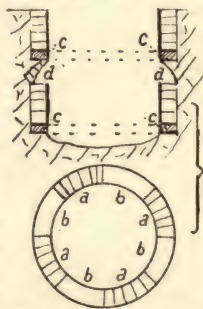


FIG. 19.—Trozos de corona ó por cajones (18) (after Moncada).

*a*, masonry ; *b*, rock ; *c*, cuadro ó rodete fundamental ; *d*, banqueta (2) ó saliente circular.



Zancudo mine, Ant. Col. a clayey material which forms the contact between the coal formation and hornblendic schists (Gamba); (14) **c. del tiro**, Mex. shaft compartment (Dwight), *see* **compartimiento** (1); (15) shoot for ore, *see* **paso** (2); (16) drain; (17) *see* **forro** (2); (18) **por cajones** (or **por trozos de corona**), method of taking down the foundation rock [**banqueta** (2)] below the wedging curb [**rodete** (3)], when the solidity of the rock is questionable, *see* Fig. 19; (19) portion of a wall between buttresses, etc. (Acad.).

**CAJONERO**, Mex. (1) shaft's mouth (Lyon), *see* **boca** (2); (2) lander or banksman (**c. exterior**), *see* **amainador**; (3) man in charge of a **malacate** (1).

**CAL**, (1) lime, **c. apagada** or **muerta**, slaked lime; **c. viva**, quick or unslaked lime; **pared de c. y canto**, wall of rough stone and mortar, *see* **cal y canto**; **ahogar la c.**, to slake lime; (2) **pedra de c.**, **c. en piedra**, chalk or limestone; (3) **c. de estaño**, calx of tin (*i.e.*, oxide of tin).

**CALA**, *see u. cata*.

**CALABAZA**, *see* **guaje**.

**CALABROTE**, *see u. esparto*; **c. del malacate**, whim-rope (Ponce de León).

**CALADO**, draught of vessels.

**CALADORA**, *see u. peña* (4).

**CALAFATEADURA**, **CALAFATEO**, calking.

**CALAMACO**, Mex. large piece of rock difficult to break up (Dwight), *syn.* **calavera** (skull).

**CALAMINA**, (1) (U.S.A.) **calamine**, (G. Brit.) **electric calamine**, *syn.* **c. silicea**, **pedra calaminar**, **cadmia**; (2) (U.S.A.) **smithsonite**, (G. Brit.) **calamine**, *syn.* **c. blanca**; (3) Peru, **zinc roofing**; **smelted zinc**.

**CALAMITA**, (1) obs. **loadstone**, *see* **imán** (1); (2) **compass-needle**, *see* **brújula** (1); (3) **siderite** or **spathic iron** (Ponce de León), *see* **siderosa**.

**CALAVERA**, *see* **calamaco**.

**CALAR**, (1) to pierce, penetrate; (2) **mech. to wedge**, *see* **acuña**; (3) to draw (of vessels), *see* **calado**.

**CALAR**, **adj.** **calcareous**, *see* **calizo**, **za**.

**CALCAR**, to take a copy of a drawing; to trace, *see* **trazar** (1).

**CALCE**, (1) tire of a wheel, *see* **llanta** (1); (2) piece of iron or steel added to drills, picks, etc., when they are worn; (3) a wedge, *see* **cuña** (1).

**CALCEDONIA**, **chalcedony**; **pedra de moco** is a very transparent variety of a white colour with black or brown spots in the form of plants = **mocha-stone** or **moss-agate**, *see* **cuarzo**.

**CALCÍN**, Mex. **roasting furnace** (Dwight), *see u. horno* (2).

**CALCINA**, **concrete**, *see* **hormigón**.

**CALCINACIÓN**, **calcination**, *see* **chamuscar**, **quema** (2), **reverberación**, **torrefacción** (1); *comp.* **dsecación**, **tueste**; **c. en pilar al aire libre**, **roasting in heaps** (Ponce de León).

**CALCINAR**, (1) to burn limestone, etc., reducing it to quicklime; (2) to calcine, *syn.* **quemar** (2), *see* **tases**, *comp.* **tostar**.

**CALCO**, a tracing, *see* **calcar**.

**CALDEAR**, (1) to weld iron ; (2) to heat (a furnace) ; (3) to glow with heat ; (4) **caldearse, una veta se caldea al respaldo**, a vein is frozen (lit. welded) to the wall ; **veta caldeada**, *see u. veta* (1).

**CALDEIRA**, *see* **caldera** (2).

**CALDEIRÃO, CALDEIRÕES**, Braz. (1) large masses of alluvial gold (J. A. Phillips), *see* **pepita** ; (2) large pot-holes in river-beds filled with diamantiferous **cascalho** (Port. large kettles).

**CALDERA**, (1) caldron or kettle, *see* **caldero** (1), **calderón, cazo** (1) ; (2) **c. de vapor**, boiler, steam-boiler, *syn.* **paila** (2) **de vapor**, equiv. Port. **caldeira** ; **c. de hogar interior**, Cornish boiler, **c. tubular**, tubular boiler, *see* **vaporizador** ; *see u.* **asiento** (8), **durmiente** (3) ; (3) Zac. Mex. common iron pyrites, *see* **pirita** ; (4) a winze, *syn.* **Linares**, Sp. **calderilla**, *see* **clavada** ; (5) the bottom or sump of a shaft or well, *syn.* **fondo** (3), *comp.* **boca** (2), **costados**. NOTE.—The sump or well at the bottom of a shaft = **caja** (3) **de agua** or **pocillo** (3), but the word **caldera** is often used synonymously with either ; **trabajo** or **labor á caldera**, sinking proper as distinguished from rising (**trabajo** or **labor á cielo**) ; (6) Tenerife, crater of a volcano (Humboldt).

**CALDERILLA**, winze, *see u.* **caldera** (4), **clavada**.

**CALDERERO**, (1) brazier, coppersmith, blacksmith ; (2) tinker ; (3) one in charge of a boiler ; (4) Mex. boiler-maker, *syn.* **calderista** (Dwight).

**CALDERISTA**, *see* **calderero** (4).

**CALDERO**, (1) caldron in the form of a bucket, *see* **caldera** (1) ; (2) wrought-iron kibble, *see* **tonel** (2) ; (3) **c. de salinas**, salt-pan.

**CALDERÓN**, large caldron or kettle, *see* **caldera** (1).

**CALECERO** (**calesero**), Mex. man who rides on hoisting-cage and gives the signal (Dwight).

**CALENTADURA**, (1) Mex. the first cake beneficiated in the furnace [**horno** (2)]. (Gamboa, 1761), [*comp.* **descarga** (2)] ; hence, (2) Mex. putting a furnace into blast, or the first heating of the furnace—this may occupy the first two or three days of a campaign, *comp.* **descarga** (5) ; (3) mech. heating (of grease-box, brake-shoe, etc.) (Ponce de León).

**CALENTAR**, to heat ; **c. los cuerpos** (2), Peru, the turning yellow of mercury in **patio** amalgamation (Dwight) ; **c. un horno**, to put a furnace into blast, to blow in a furnace, *see* **calentadura** (2), *u.* **dar** and **horno** (2).

**CALENTURA**, Mex. an excess of chemical activity in the **patio** process—the rapid formation of mercurous chloride due to an excess of cuprous sulphate, *see u.* **torta**.

**CALERA**, (1) lime-pit or deposit ; (2) lime-kiln, *see u.* **horno** (1) ; (3) receptacle in which wood is burnt for charcoal [**carbón** (1)] (4) **caleras**, *see* **tases**.

**CALERO, RA**, adj. calcareous, *see* **calizo, za**.

- CALERO**, (1) man who extracts the stone for making lime ; lime-burner ; (2) Mex. roaster-man (Dwight).
- CALESA**, Mex. bucket for ore or water (Dwight), *see* **cubo** (1).
- CALESERO**, *see* **calecero**.
- CALHAU**, **CALHAO**, Port. flint-stone, pebble, *see* **guija** (1).
- CALIBRADOR**, bor. tool for equalising the sides of the borehole.
- CALICANTO**, *see* **cal y canto**.
- CALICATA**, (1) *see u. cata* (4) ; (2) trench (Gillman), *see* **zanja** (1).
- CALICHAL**, Mex. second-class silver ore (carrying from 150 to 1000 ounces per ton) (Dwight) ; Pachuca, Hid. best or first-class ore separated in the mine, the second class being known as **azogues**.
- CALICHE**, (1) Peru and Chile, impure native nitrate of soda or a saline material, composed principally of nitrate of soda, common salt, salts of magnesia and various sulphates, among them gypsum, mixed, more or less, with earth. In Chile it is not found on the surface of the plains, but is covered by two layers, (a) **chuca**, or light surface soil from a few inches to several feet thick, and (b) **costra**, salt with lime and magnesian earthy matters and fragments of stone, sometimes conglomeratic, but may be missing altogether. **Caliche** may be from a few inches to 20 feet thick ; 5 feet is a good working average. Below the **caliche** is **cova**, a loose, sandy, gravelly soil. Average **caliche** contains 35 per cent. nitrate, the best 75 per cent. ; **huesudo** has hard masses of lime in it ; **jaboncillo** has streaks of lime running through it ; **macizo** is hard milky white, chrome yellow or blue (sulphate of copper) ; **negro** has a dark colour and close texture ; **poroso** is soft, whitish and sometimes granular ; **uchanachacado** is the more common variety, with dark brown tinge, and granular surface ; Arg. in the salt-marshes [**salinas** (3) **grandes**] boracic nodules [**papas** (2)] are sometimes cemented together by, and impregnated with, a hard material called **caliche** by the workmen ; this consists largely of sodium nitrate, gypsum, glauberite, pickeringite, and rock-salt (H. Buttgenbach) ; (2) Uco, Peru, a thin layer of clayey soil capping auriferous veins ; Chile, whitish clay in the selvage of veins (Dwight) ; Durango, Mex. white decomposed clay, *see* **arcilla** ; (3) Mex. felspar, *see* **calichoso**, **sa** (2) ; (4) Guan. Mex. a compact transition limestone (Dahlgren), *comp.* **frijolillo** ; calcite (*see u. esparto*) ; calcareous tufa or travertine, or snow-white carbonate of lime covering basin-deserts ; Mex. and S. Arizona, U.S.A. : " A calcareous formation of considerable thickness and volume found a few inches, or a few feet, beneath the surface soil, upon the broad, dry, gravelly plains and mesas. It is practically a continuous sheet, from 3 to 15 feet thick, of earthy limestone or travertine, through which the smaller plant-roots find their way with difficulty. The formation is clearly the result of the upward capillary flow of calcareous water, induced by constant and rapid erosion at the surface in a comparatively rainless region " (W. P. Blake) ; *syn.* **tepetate** (6), **tierra blanca**, *see* **toba** (2), *comp.* **adobe** (3) ; (5) Ant. Col. a mineral vein, recently discovered : " Me encontré un



caliche" (Uribe); (6) Ant. Col. decomposed calcareous quartz (Uribe); (7) **c. negro**, Cerro de Pasco, Peru, miners' name for rich sulpho-arsenides and sulphides of copper; (8) Col. alluv. m. a bank composed of clay, sand, pebbles and small boulders indiscriminately mixed and roughly stratified, usually in four layers—top, yellow; second, white or grey; third, red; and bottom, blue. The **cinta** (3) generally occurs in the last, but may be a few inches from surface. **Caliche** gold is very fine and flaky (C. Bullman).

**CALICHERA**, Chile, deposit of caliche (1).

**CALICHERO**, **RA**, adj. relating to caliche (1); **carro calichero**, nitrate wagon.

**CALICHOSO**, **SA**, adj. calcareous, *see* **calizo**, **za**; (2) felspathic; **metal calichoso**, felspathic ore.

**CÁLIDO**, **DA**, adj. hot; **minerales** or **metales cálidos**, Chile, silver ores consisting of silver, native or combined with mercury, as arquerite, amalgam, etc., chloride, bromide, iodide and sulphide of silver, fit for amalgamation by the Tina process; when chlorides predominate, forming a grey and ochreous earth = **pacos** (2), when malachite or azurite predominates = **colorados** (2), *comp. u.* **calientes**, **frío**, **ía** (2), **metales de cazo** [*u.* **cazo** (4)].

**CALIENTE**, adj. warm, hot, *see u.* **curtir**, **torta**.

**CALIENTES**, Mex. silver ores, generally **colorados** (1), with some sulphate of iron, the result of decomposition (Hermosa), *comp. u.* **cálido**, **da**, **fríos**.

**CALIZA**, limestone, *syn.* **cal en piedra**, **piedra de cal**; **c. carbonífera**, carboniferous limestone; **c. fétida**, stinkstone or anthraconite; **c. hidráulica**, limestone which yields hydraulic lime on burning; for other varieties, *see* **calón**, *u.* **cantera**, **cebo** (7), **conchífera**, **lechecilla**, *u.* **manto** (1), **mesa** (9), *u.* **piedra**, **tabaire**, **tajón**, **tenestal**, **tatales**.

**CALIZO**, **ZA**, adj. calcareous, *syn.* **calar**, **calero**, **ra**, **calichoso**, **sa**.

**CALLANA**, Cerro de Pasco, Peru, a government smelting-house or mint (Tschudi), *see u.* **casa**.

**CALLAO**, pebble, *see* **guija** (1).

**CALLAPOS**, Peru, rude wooden steps at the mouth of a mine (Dwight).

**CALLEJÓN**, (1) long narrow lane between two walls, *see* **carrera** (3); (2) narrow pass between mountains (Velázquez), *see* **paso** (4); (3) c.m. narrow space or bay between pack-walls.

**CALOCAR**, kind of white earth or clay (**arcilla**).

**CALÓN**, Huelva, Sp. sandstone (**arenisca**) or limestone (**caliza**), impregnated with oxide of iron (Molina).

**CALOR DE FRÍO**, Mex. in the **patio** process, the steam caused by the difference between the heat of the pile and the air (T. Egleston).

**CALORÍA**, Fr. **calorie**, or the quantity of heat necessary to raise 1 kil. of water from 0° to 1° C.

**CALORÍFERO**, vertical tabular boiler used in Piccard's method of obtaining salt (Molina), *see* **cyclogeno**, **extractor**, **obturador**, **recalentador**, **vaporizador**; **c. de vapor**, kind of stove with tubular boiler.

**CALVERO**, *see* gredal.

**CAL Y CANTO** (lime and stone), (1) Mex. rubble masonry, *syn.* **calicanto**, **mampostería** (1); (2) (**calicanto**), Chuquibamba, Peru, auriferous conglomerate (Dwight), *see* **conglomerado**.

**CALZA**, shim, liner (Dwight); stone for scotching a wheel.

**CALZADA**, causeway, a paved highway; high road; ballasted road.

**CALZADERA**, hempen cord, *see* **cañamo** (2).

**CALZADURA**, (1) wooden tire of a wheel (**llantas** or **pinas de madera**); (2) stamp-head, *i.e.*, including boss (**cabeza**) and shoe (**zapato**), *syn.* Mex. **mano** (4), **maza** (1), **mazo** (3), **mortero** (1), *see* **almadaneta** (1), *u.* **molino** (1), **pilón** (4), **pisón** (2).

**CALZAR**, (1) to strengthen with iron or wood; (2) to scot or scotch a wheel, *see u.* **calza**; (3) Mex. to sheathe or face with metal (Dwight); (4) to shim; to tamp (Dwight); (5) **c. con zoquetes** (1), **timb.** to sprag (Ponce de León).

**CAMA**, (1) floor of a cart, *syn.* **lecho** (5), *see* **cajón** (1); (2) fellow of a cart-wheel, *see* **pina** (2); (3) cam, cog, catch, tooth, *see* **leva** (1), **paleta** (5), **sobarbo** (1); **c. del bocarte**, cam of a stamp, *syn.* **álabe** (2), **lengua** (3), **tope** (2), **turrión** (3), **uña** (2), *equiv.* Fr. **came**, Ger. **Hebling**, *ccmp.* **diente** (1) and (2), **triángulo**; (4) bed-plate, base, *see u.* **asiento** (8); (5) geol. layer, stratum, *see* **capa** (1); (6) Pachuca, Hid. Mex. **timb.** a stull or bunding, *see* **camada** (3); (7) **camas**, Mex. lagging in the roof of a gallery, *see* **encamadas**, *u.* **retacar**; (8) Arg. gold-mill. plates, *see* **plancha** (2); (9) mech. prep. filtering bed or "bedding" used in certain jigs, *syn.* **fondo de granza** or **tamiz**, *equiv.* Fr. **fond filtrant**.

**CAMADA**, (1) geol. bed or stratum, *see* **capa** (1); (2) mas. bed, layer or course (Ponce de León), *syn.* **boquilla** (4), **capa** (3), **carrera** (6), **hilada**, **hilera** (1), **mampuesta** (1), *see* **banco** (8); (3) **c. de madera**, **timb.** platform, stull, **sollar** or bunding, *syn.* Pachuca, Hid. Mex. **cama** (6), Linares, Sp. **fajado** (2), **plataforma** (1), **piso** (5) **de madera**, Mex. tapestry (1), *equiv.* Ger. **Kastenzimmerung**; *see also* **cobija** (2), **encajonamiento**, **encamación** (2), **tabladillo** (1), **tablero** (2), **tarango**, **taranguela**, **tinqueria**, **zarzo** (2), *comp.* **descanso** (1). NOTE.—In Spain, strictly speaking, a **sollar** formed of stemples only, with other timbers crosswise on them = **encamación** (2).

**CÁMARA** (hall or chamber), (1) **c. para el torno**, plat for windlass, *see* **cóncava**; (2) ore-shoot or chamber deposit, *see* **clavo** (2); (3) **cámaras de condensación**, met. condensing chambers; (4) blast. chamber at the bottom of a borehole; (5) large chamber in a mine, *syn.* **grandes cámaras** or **anchurones**, *see u.* **labor** (3); (6) **cámaras**, chambers of a pump, *see* **caja** (4); (7) **c. de equilibrio**, equilibrium chamber of Triger's method of sinking against water, etc.; (8) **cierre de pozo de extracción por cámaras**, a chimney provided with sliding-doors at the unloading (Molina), *comp.* **compuerta** (3); (9) st. eng. steam-chest, *syn.* **caja** (4) **de vapor**; (10) **c. de agua**, sump, *see* **caja** (3); (11) **c. de los hornos**, st. eng. stokehole (Ponce de León); (12) **cámaras** Braz. municipal councillors (Henwood).

**CAMARTELLO**, Port. quarryman's hammer (Elwes), *see* **martillo**.

**CAMBIADOR DE AGUJA**, pointsman, *syn.* **cambiavía** (3), Span. Am. **chuchero**.

**CAMBIAMANO**, rail. switch, *see* **cambio** (1).

**CAMBIAR**, Mex. to switch (Dwight).

**CAMBIAVÍA**, (1) switch, *see* **cambio** (1); (2) Mex. turntable (Dwight), *see u.* **placa**; (3) man who operates switch (Dwight), *see* **cambiador de aguja**.

**CAMBIO**, (1) transp. switch or movable rails which connect one line with another, *syn.* **aguja** (5), **cambiamano**, **cambiavía** (1), Cuba, **chuchero**, Col. **suiche**, **varilla** (2), equiv. Fr. **aiguille**, **aiguilles**, or rails mobiles, Ger. **Weiche**, *see* **abanico** (2), **corazón** (2) and (3); (2) **c. de via**, transp. siding, *see* **desvío** (2); (3) com. exchange, rate of exchange, *see* **curso** (4), *comp.* **bolsa** (5); (4) alteration, change; **c. de naturaleza**, variation in the quantity and class of material forming the sediment of a deposit; **c. de potencia**, change in the thickness of a deposit.

**CAMELLÓN**, carpenter's horse, *see* **burro** (2).

**CAMILLA**, small bed, cot or stretcher, *see* **parihuela** (2); **c. gotera**, stretcher provided with a metallic support for the whole body.

**CAMILLEROS**, stretcher-carriers.

**CAMINO**, (1) road, *syn.* **vía** (1); **c. carretero**, road for carriages and wagons; **c. de fuerza de sangre**, barrow road or horse road; **c. de herradura**, path (*senda*), bridle road; **c. real**, high road; **c. de hierro** or **vía ferrea**, railway, railroad (*ferrocarril*); **c. de rieles**, track; *see* **callejón** (1), **carrera** (1), (2) and (3), **carretera**, **carril** (2), **rumbo** (2); (2) drift or gate; any gallery or shaft used for general transit, *see* **galería** (1), **pozo** (2); (3) **caminos** (Mex.), **costales** or ore-sacks (Gamboa, 1761).

**CAMISA** (shirt), (1) st. eng. jacket, case, casing; **c. de agua**, met. water-jacket, *see* **chaqueta**; **c. de caldera**, boiler-jacket; **c. de cilindro**, steam-jacket, *see* **cubierta** (1); (2) internal refractory lining of a furnace [**horno** (2)]; (3) **c. de bronce**, thin lining of bronze in pumps (Molina); (4) Cabeza de Vaca, Sp. a provisional dam against fire, made of boards nailed against a timber set (Molina), *see* **cerramiento**; (5) *see* **capa** (4).

**CAMÓN** (large bed), (1) frame of canes or laths for forming the arch (**arco**) known as **bóveda encamonada** or **figida** (Acad.), *comp.* **cimbria** (1); (2) each of the curved pieces or segments composing the double rim or periphery of a water-wheel, *see* **anillo** (6); segment or section of the crown-wheel [**corona** (3)] of a Chilean mill, etc., *comp.* **pina** (2); (3) **camones**, thick pieces of evergreen oak (**encina**), used as a tire on cart-wheels (Acad.); iron tire of mill-wheel (Dwight), *see* **llanta**; (4) Mex. in patio process, a duct leading from the **torta** to the **lavadero** (3); (5) **camones**, Mex. pine-boards forming the sides of an **arrastre** (3), *syn.* **duelas**; (6) **camones**, Mex. oak-boards, 0·305 m. wide, 0·051 m. thick, and 1·829 m. long used for dragging (by means of horses or mules) the **lama** to the patio (Bol. del I. G. de M.).



**CAMPANA** (bell), (1) *piedra de c.*, clinkstone or phonolite; (2) *c. de aire*, Mex. pump. air-vessel, *see depósito* (7); (3) bottom of a well made in the form of a bell, *see caja* (3); (4) *see capellina*; (5) Mex. adobe hood of a cupellation furnace [*vaso* (2*b*)]; (6) *válvula de c.*, double-beat valve, *see bomba* (1); (7) *c. de válvula*, bor. ball-valve sludger, equiv. Fr. *cloche à boulet*; (8) *c. de tuerca*, screw-bell, equiv. Fr. *cloche à vis*, *cloche à écrou*, Ger. *Falsschraube*; (9) bell-shaped cave produced in hard rocks, *comp. embudo* (3), *revenimiento*; (10) *c. pneumática*, an improved form of Harz blower, *see u. ventilador*; (11) Ant. Col. alluv. m. in *minas de saca* (3), unmineralised ground which remains after it is levelled up [*asentado*, *see asentar* (1)]; (12) *c. de chimenea*, flue, *see humero*.

**CAMPAÑA**, (1) campaign, level country, *see llano*; (2) met. campaign; (3) working shift (Ponce de León), *see relevo*.

**CAMPANELA**, Mex. upper drill-hole (Dwight), *see barreno* (1).

**CAMPANERO**, Mex. bellman or station tender (Dwight).

**CAMPANIL**, adj. metal *c.*, bell-metal, *see bronce* (1).

**CAMPANIL**, Bilbao, Sp. hematite of a reddish colour, fairly compact, and presenting very frequently the characteristic fracture of siderite (J. D. Kendall). "Red hematite of a purple colour, with beautiful rhombohedrons of spathic iron, less ferriferous but less silicious and less hydrated than the other varieties. It is at the base of the formation, and intercalated between two limestone beds" (Goupillière). *See hematita*, *comp. rubio*, *vena* (2); *c. avenado*, intermediate ore (Molina).

**CAMPERO**, (1) tributer, *see campista*; (2) the fireman in charge of campos (2) (Dwight).

**CAMPISTA**, (1) tributer, *syn. buscón* (2), *campero* (1), *campo* (2), *gambucino* (2), Chile, *pirquinero*, equiv. Ger. *Halbhäuer*, *Lehnhäuer*, *comp. destajero*.

**CAMPO** (country, field or ground), (1) Mex. a pitch, a working in possession of *buscones*, or allotted to the proprietors or others (M. J. Gloss.), a tribute-pitch, equiv. Fr. *limite de la tâche*, Ger. *Arbeitsgrenze*; (2) tributer, *see campista*; at Pachuca and Real del Monte, Hid. Mex., it is customary on Saturdays and Sundays, when the miners do not work, for the campos to enter and work for forty-eight hours; they are paid one-eighth in ore [*see u. partido* (3)]; (3) *c. de labor* (a), any long and wide working, *see tajo* (4); (4) *c. de labor* (b), *cuartel* or *compartimientos*, sections of work formed by main roads and cross or diagonal ones (Molina); (5) *c. de explotación*, in a deposit worked by two shafts = half the distance separating the shafts in direction and inclination (Molina); (6) Mex. mining camp, *see real* (1); (7) *campos*, Braz. undulating tableland and low rounded hills, between 2000 and 3000 feet above the sea (Henwood), *see capões*, *comp. meseta* (2).

**CAN**, (1) canes, Ant. Col. cross-sills or joists on which the flooring rests, *e.g.*, 11 feet  $\times$  5 inches  $\times$  5 inches, *see* **cabio**, *u.* **viga**; (2) arch, bracket or modillion, shoulder-piece or corbel, *comp.* **repisa**.

**CAÑA**, (1) cane or reed; **c. dulce**, sugar-cane; **c. brava**, bamboo; (2) mine gallery; Huelva, Sp. a gallery 2 m. wide and 2 m. high (Molina), *see* **galería**; (3) blast. borehole, *see* **barreno** (1); (4) Poza salt mines, Burgos, Sp. a shaft [**pozo** (2)] 0.84 m. square, lagged or lined with planks (Molina).

**CANADA**, Port. a measure = .307 gal., at Pernambuco = 1.357 gal. (Spon).

**CAÑADA**, (1) glen or dale between hills; glade, *comp.* **arroyo** (2), **barranca** (2); (2) Span. Am. stream or current of water with a narrower bed than a **quebrada** (5), and which disappears completely in the dry season (F. de P. Muñoz), *comp.* **amagamiento**.

**CANAHUATE**, Col. a species of *lignum-vitæ*, *comp.* **guayacán**.

**CANAL**, (1) any artificial gutter, channel, drain or leat, *see* **acequia**; Mex. waterspout for the **tina** (G. F. Lyon); (2) **c. del oro**, gold-bearing channel, *see* **cascajo** (6); (3) **c. de polea**, the groove of a pulley or sheave, *see* **garganta**; (4) hydr. m. sluice, *see* **canalón** (3); ground-sluice, *see* **canalón** (2); (5) flume, *see* **caz**; (6) **canales**, Ant. Col. alluv. m. channels or flutings (**estrías**), formed originally in the solid beds (**lechos**) of rivers, by the friction of water, or by the sand or rocks which they carry (Uribe); (7) canal or artificial watercourse; (8) **c. de humo**, Mex. flue (Dwight), *see* **humero**; (9) **canales superpuestos**, the name given by Molina to the spout of the Newcastle coal district; (10) hemp (**cañamo**) which has been once hackled (Velázquez), *comp.* **cerro** (3); (11) channel or bed of a river, *see* **álveo**; (12) tel. pole of copper (Velázquez); (13) **canales**, Cartagena, Sp. deposits of manganiferous oxide of iron, formed by filling of crevices (**grietas**) in limestone and conformable to its stratification (Moncada); (14) Cartagena, Sp. name sometimes given to true lodes, *see* **filón**, **veta** (1); (15) long and narrow plain between two parallel mountains (Acad.), *see* **llano**.

**CANALEJA**, (1) Mex. timb. lower wall-plate of the frame of an inclined shaft, *see u.* **marco** (2); (2) *see u.* **ensamblado**; (3) Arg. inclined bed of a **lavadero** (3), or gold-washing apparatus.

**CANALEJO**, leat (Ponce de León), *see* **acequia**.

**CANALETE**, small spout or gutter, *see* **canal** (1), **canalón** (1).

**CANALIZO**, vent. outside opening or narrow channel of a fan leading to the stack, *comp.* **oído** (2).

**CANALÓN**, (1) large gutter or spout, *syn.* **canal** (1), **canalete**, **canelón**; (2) Ant. Col. ground-sluice used in native gold washings, or the place where the sands are collected for separating them from the gold, *syn.* **canal** (4) **para lavar oro**, *see* **cabecera** (5), **chocar**, **demas** (1), *u.* **grueso** (4), **mangar**, **mazamorra** (2), **plan** (3), *u.* **tapón** (3), *u.* **tonga**; (3) Col. hydr. m. sluice, *syn.* **canal** (4) **esclusa**, **tragante** (1), *equiv.* Fr. **lavoir à couloir**, Braz. **bolinete**, *comp.* **ingenio** (4); (4) Col. gold-mill. channel

forming the continuation of the tables (*mesas*), provided with stoppers (*tapones*) at intervals, for holding the sands and *jaguas* intended for the *arrastre* (3); (5) Col. a depression of the earth, natural or artificial, in the form of a channel with two sides and a bottom, by which rain-water runs away (*Muñoz*), *syn.* *guaico* (2).

**CAÑAMAZO**, (1) tow of hemp, *see* *estopa* (1); (2) coarse canvas made of (1).

**CAÑAMO** (Port. *canhamo*), (1) hemp (for Manila hemp, *see* *abacá*; for Chilian hemp, *see* *henequén*; for Paraguay hemp, *see* *caraguata*); (2) twine or rope made of hemp; *cuerda plana de c.*, flat hemp-rope, *cuerda redonda de c.*, round hemp-rope, *see u. blanco, ca, calzadera. canal* (10), *cerro* (3), *chorrón, tasco* (1).

**CANASTA, CANASTRO**, basket; *see* *banasta, banasto, capacho* (1), *cebadera* (2), *cesta, cestón, charco* (5), *chiquichuite, colote, espuerta, gamela* (2), *gávia, jaba, jorongo* (1), *sera*. NOTE.—In Span. Am. the name is sometimes improperly applied to the skip [*chalupa* (1)].

**CANASTILLO**, Mex. tramway-bucket (Dwight), *see u. balde*.

**CANASTRO**, *see canasta*.

**CANCEL**, wooden screen at the side of a water-wheel, to prevent the water splashing into the mill, *see u. guaca* (1).

**CANCHA**, (1) ore-bin, *see depósito* (4); (2) place for drying slimes or sorting ore; (3) Peru and Chile, mine-dump; *metal en cancha*, ore on the dump or at grass, *comp. vaciadero*; (4) Chile, dressing-floors, *see hacienda* (4).

**CANCHAL**, rocky or stony place; *see pedregal*.

**CANCHERO**, Peru, person in charge of dumping and sorting of ores (Dwight).

**CANCHO**, large rock in mountains or on heights (Acad.), *see peñasco*.

**CANDADO**, padlock.

**CANDEA, CANDEIA**, (1) Port. lamp, *see lámpara*; (2) Braz. a very strong timber which supplies polings for lagging sets: it has a disagreeable odour. Other Brazilian woods used for lining-up sets are *angelan, aroeira, brauna, sucopora, ipe-jacaranda* (H. K. Scott).

**CANDELA**, (1) candle, *see vela* (2); (2) candlestick; (3) *piedra de c.*, flint.

**CANDELEJA**, Ant. Col. candle-holder with spike, used in mines, *syn.*, Sp. *candelerio de mina, see caballo* (7), *u. mechero*.

**CANDELERO**, (1) candlestick or candle-holder, *syn. velador* (2), *see candeleta, cubo* (4); (2) mech. coupling-case, socket, fork, crotch, etc. (Ponce de León); Mex. a socket deeper than the *chumacera*, and used for the same purpose (Lyon), *see cubo* (4), *cuenca* (4); (3) Mex. part of drill-hole remaining after blasting (Dwight), *see barreno* (1); (4) Peru, piece of clay on which retort-silver is laid for final heating (Dwight), *see plata* (1); (5) lamp, *see lámpara*.



**CANDIL**, an oil-lamp (*lámpara*) used in mines, *syn.* Sinal. Mex., *cachimba*, Linares, Rio Tinto, Sp. *churro*; *c. de bombilla*, Almaden, Sp. a simplified oil-lamp; *c. francés de estribo* or *de cebolla*, flat oval lamp, provided with a stirrup, *syn.* Linares, etc., *tortuga*.

**CANDILEJA**, (1) small oil-lamp, *see lámpara*; (2) oil-vessel of a lamp, *see u. lámpara*.

**CANELO**, (1) cinnamon-tree or cinnamon-laurel (*Laurus cinnamomum*); in Tolima, Col. the wood of a tree of this name is much prized and used for making furniture, trunks, etc., and for general mining purposes; (2) *pedra de c.*, *see u. granate* (1).

**CANELÓN**, *see canalón* (1).

**CAÑERÍA**, (1) aqueduct (*acueducto*), water-pipe, *see tubo* (1); (2) series of water-pipes, *see tubería*; *c. de descarga*, water discharge (Lucas); (3) gutter of an adit, etc., *see cuneta* (2).

**CAÑESDA**, Mex. a tree of a yellow colour.

**CANGA**, Braz. a kind of auriferous glacial rock, in reality an iron breccia. In the province of Minas Geraes the deposit consists of angular fragments of magnetite, iron slate, iron glance, and brown ironstone, together with small quantities of quartzite, itacolumite, and other rocks. It varies from 1 to 4 yards thick, extends for a great distance, resting on iron schist, mica schist, talc schist, clay-slate, or itacolumite as a bed-rock (J. A. Phillips). At Passagem the itabirites are overlaid by a crust of *canga*, a brown porous conglomerate; this is made up of fragments of the underlying rock, bound together by a ferruginous argillaceous crust (E. Hussak); *syn.* *tapanhoacanga*, *see brecha* (2).

**CANGALLA**, Chile, stolen ore (*metal robado*).

**CANGALLI**, Tipuani, Bol. a ferruginous quartz-conglomerate, a false bed-rock [*roca* (7) *falsa*] overlain by a bed of very rich gold-bearing sand from 12 to 40 inches thick (Frochot), *see conglomerado*.

**CANGILÓN**, (1) earthen jar or pitcher; (2) oblong earthen jar fastened to the rope of a draw-well [*noria* (1)], or to a wheel for lifting water, *syn.* *arcaduz* (3); (3) *cadena de cangilones* (2), elevator pump, *see u. bomba* (1), *noria* (1).

**CANGREJEROS**, **CANGUEREJOS** (crabs), Ant. Col. bunches or small pockets (*bolsillos*) of gold occurring in the smaller veins or *venillas* (Uribe), *see bolsa* (1).

**CANGREJO** (crab), rail. trolley, *see vagoneta* (1).

**CANGUEREJOS**, *see congrejeros*.

**CANILLA**, blast. a small cane or reed for conveying the fire to the charge, *see mecha* (1).

**CAÑO**, (1) obs. mine; (2) pipe or tube, *see tubo* (1); *c. soplante*, c.m. vent. air-tube, *comp. caja* (20); (3) S. Am. rivulet, *see riachuelo*; (4) obs. gallery, *see galería*.

**CANOA** (canoe), (1) Ant. Col. a flume, *see* **caz** ; (2) Braz. a sort of long-tom or sluice used by river-washers ; orig. a rectangular trench, 1-1.5 m. long, 0.5-0.7 m. wide, and 0.1-0.6 m. deep, nearly horizontal, forming the **cabeceira** ; below is the **bica**, 2 m. long, inclined from 15° to 25°, on which blankets or hides are placed ; it is made of stone when required to be permanent, when of wood = **bolinete** (Calogeras).

**CAÑÓN**, (1) cylindrical tube or pipe ; **c. de engrasa**, grease-tube covering an axle ; **c. de vidrio**, glass chimney of a lamp, etc., *see* **tubo** (1) ; (2) level or horizontal gallery ; **c. á hilo de veta**, level on the strike of a vein ; **c. de guía**, (a) level or gallery driven along a vein, shoot or deposit ; (b) an exploratory level (**c. de indigación**), *see* **galería** ; (3) met. an inclined flue ; **c. de chimenea**, flue or smoke-stack, *see* **humero** ; (4) **c. de corrida**, pump. working barrel of a drawing-lift, *see* **cuerpo** (8) ; (5) a deep valley, ravine or gorge, U.S.A. canyon, *syn.* Peru, **mala**, *see* **desfiladero**, *comp.* **barranca** (2) ; (6) barrel of a safety-pistol (**pistolete de seguridad**) ; (7) **c. de fuelle**, nozzle of bellows, blast-pipe (Ponce de León), *comp.* **pitón** (1).

**CAÑONAZO** (report of a shot), **dar c.**, blast. to make a great noise on exploding, showing the useful effect of the shot to be low ; when the noise produced is small, the hole is said to be **sordo** (silent) and the useful effect is great (Molina).

**CANTAL**, (1) stone, pebble, *see* **canto** (3) ; (2) *see* **cantizal** ; (3) stone ashlar (Ponce de León), *see* **sillar**.

**CANTARA**, Durango, Mex. white decomposed clay, *see* **arcilla**.

**CANTARO**, Guadalcázar, S. L. Pot., Mex. clay-retort (**retorta**) used for reducing mercury ores, *see* **mercurio** (2).

**CANTERA**, (1) stone quarry, *syn.* obs. **cantería** (1), **pedrera**, **pedriza**, equiv. Port. **canteira**, **pedreira**, Fr. **carrière**, Ger. **Steinbruch** ; **c. de mármol**, marble quarry ; **c. de pizarra**, slate quarry, *see* **pizarral** ; **en cantera**, working open-cast, *see* **tajo** (3) ; **labores de c.**, open-cast workings, *see* **tajo** (2) ; (2) quarry-stone (Ger. **Bruchstein**) ; Durango, Mex. an unstratified stone, apparently of volcanic origin, sometimes in immense vertical, hexagonal or octagonal columns, composed of particles of all sorts of rock ground up and mixed together, often honeycombed, very light and soft, but hardening in the atmosphere. It caps many of the higher hills (W. H. Glennie). According to Aguilera, generally andesitic tuff, sometimes passing into a true andesitic breccia ; in some places it is a trachytic tuff ; Chile, Mex. phosphoric and cretaceous limestone resting on primary formation in the whole region of the north ; St. Eulalia, Chih. Mex. a ferruginous metamorphic rock in horizontal beds, 1700 feet thick, resting on fossiliferous cretaceous limestone (Dahlgren) ; according to R. T. Hill, an altered or metamorphosed quartz-porphry cinder, consolidated and cemented by the influence of air and percolating waters ;



Sinal. Mex. white porphyry banded in a direction parallel to the veins ; Atacama, Chile, a light sandy tuff, 100 to 150 feet thick, forming the hanging wall of the Elisa vein at a depth of 1620 feet on the dip (O. Nordenskjöld), *comp.* **manto negro** ; *comp.* **cantería** (4) ; (3) Venez. small veinules of quartz, which detach themselves from the principal vein (L. F. Viala) ; “ surface lodes without defined walls ” (G. P. Ashmore and C. Seale) ; gold from **cantera** is generally high grade, and is known as **oro de cantera**, *see* **veta** (1) ; (4) Almaden, Sp. underground quarry ; **c. de explotación**, chamber of excavation.

**CANTERÍA**, (1) obs. quarry, *see* **cantera** (1) ; (2) stone-cutting ; quarrying [*see* **cielo** (3)] ; (3) mas. ashlar work or rough masonry, *see* **sillería** ; Almeria, Sp. squared stone (**sillería**) used in **mampostería por hundiimiento** ; (4) Mex. an igneous tufa (**toba**) or conglomerate rock which had a certain fluidity by means of water or steam (Bárcena), *comp.* **u. cantera** (2).

**CANTERO** (Port. **canteiro**), (1) stone-cutter, *see* **pedrero** ; (2) quarryman, equiv. Port. **cavouquero**, Fr. carrier, Ger. **Steinbrecher**.

**CANTIDAD**, quantity.

**CANTIL**, steep rock ; precipitous mass of stone, *see* **acantilados**.

**CANTIZAL**, stony ground, place full of stones, *syn.* **cantal** (2), *see* **pedregal**.

**CANTO**, (1) end, edge, or border ; **de canto**, on edge, edgeways, edgewise (Fr. **de champ**) ; (2) thickness of anything ; Zac. Mex. the thickness of rectangular timbers, *comp.* **tabla** (3) ; (3) stone, pebble, *syn.* **cantal** (1) ; fragment of flint (**pedernal**) ; **cantos erráticos**, geol. erratic blocks (Ponce de León) ; **cantos rodados**, pebbles or boulders, *see* **guijarro** (1) ; (4) mas. quarry-stone, block, dressed ashlar, *syn.* **piedra de canto**, *see* **sillar**.

**CANTONERA**, surv. plate of metal at the ends of rods, used in measuring bases.

**CANTURRÓN**, Ant. Col. oxide of manganese, *syn.* **c. mineral**, Chaparral and Lerida, Tolima, **neme** (**canturrón** = bee-glue or **tanca**).

**CANUTILLO**, **CAÑUTILLO** (small tube or pipe), (1) **c. de trigo**, blast-match, *see* **mecha** (1) ; (2) Boyacá, Col. fine emerald (**esmeralda**) suitable for use as a gem, *comp.* **morallión** ; (3) **carbón de c.**, *see* **u. carbón** (1).

**CAOBA**, **CAOBANA**, mahogany-tree (*Swietenia mahogani*), or mahogany-wood.

**CAOLÍN**, kaolin, china-clay, *see* **arcilla**, **jaboncillo** (3), **pataz** (1), **u. tierra** (3), **u. tosca** (1).

**CAPA**, (1) bed, layer, seam or (geol.) stratum (**estrato**), *see* **banco** (3), **cama** (5), **camada** (1), **capita**, **filón** (4), **lecho** (2), **vena** (2), **venero** (4), **veta** (2) ; **capa de carbón**, coal seam, *see* **dispersión** ; **capas**, interstratified deposits. NOTE.—In Port. **capa** = roof or hanging wall, as well as layer or stratum. (2) **C. de filón**, bedded vein ; (3) mas. bed or course, *see* **camada** (2) ; (4) timb. cap or cap-piece, (Somers.) bar, (N. Eng. and Austral.) crown or crown-tree, *syn.* **Santander**, Sp.



- cabecil**, Sevilla, Sp. and Zac. Mex. **cabezal** (2), Col. **capiz**, **cumbrera** (2), **punte** (7), Peru, **sombrero** (4), **tinca** (1), **travesaño** (2), **umbral** (3), equiv. Fr. **chapeau**, Ger. **Kappe**, *see* **abrazadera** (4), **tiple** (2) ; (5) mech. prep. shell of rolls [**cilindros** (4)], *syn.* **camisa** (5).
- CAPACHEN**, Peru, car-boy, *see* **carretero** (1).
- CAPACHERO**, Peru, man who carries the **capacho** (2) ; c. de **barreta** (4), one who carries the same up the **media barreta** (*see u. medio, dia*), he also assists the **barretero** in drilling, holding and rotating the same.
- CAPACHO**, (1) large basket, *see* **canasta** ; (2) Peru and Chile, raw-hide bag, attached by cords to the arms, the hand being free to carry a lamp, capacity 2 to 4 **arrobos**, *syn.* **bolsa** (6), *see u. hapires, rongueros* ; (3) c. de **albañil**, bricklayer's hod ; (4) **mina de c.**, Ant. Col. a poor capricious or patchy mine.
- CAPARROSA**, (1) copperas, iron or green vitriol or melanterite [ $\text{FeSO}_4 + 7 \text{aq.}$ ], the result of the decomposition of pyrites, marcasite or pyrrhotite, *syn.* **alcaporrosa**, Peru, **colpa** (2), **copaquiras** (Barba), *see* **ocre**, *comp.* **sorí** ; **tierra de tinta** or de **caparrosa**, ochreous earth containing peroxide of iron and sulphates of iron (Humboldt) ; (2) artificially formed vitriol composed of sulphate of iron (green), copper (blue) or zinc (white), (c. **verde**, c. **azul**, and c. **blanca**, respectively), *see* **vitriola**.
- CAPATAZ**, (1) overseer or superintendent, *see* **superintendente** ; (2) in mints, the official who receives the marked metal to be coined ; (3) "captain," foreman or boss, *see* **amo** (1), **cabo** (3), **capitán** (2), **contra-maestre**, *u. jefe*, **mandón**, **manigero**, **mayordomo** (2), **obrajero**, *u. portero*, *comp.* **capitán** (1), **mayoral**, **mayordomo** (1), **sobrestante** ; c. **mayor**, chief or head captain, or (c.m.) underviewer ; (4) the **aperador**, *see u. apero* ; (5) c. de **fundición**, master-smelter (Ponce de León).
- CAPAZO**, Cartagena, Sp. **espuerta** holding 30 to 60 k. (Moncada).
- CAPELA**, Mex. strap passing over a man's shoulders from the handle of a wheelbarrow (Dwight), *see* **carreta** (2).
- CAPELLA**, S. Am. cupelling-furnace (Lucas), *see* **cópola** (1).
- CAPELLINA**, Mex. in the **patio** process, the bell-shaped hood [**campana** (4)] of copper or iron beneath which the amalgam (**bolos**) is distilled, *see* **caperuza** (1).
- CAPERUZA**, (1) Peru, sheet-iron or earthen cylinder, placed over amalgam in distilling, *see* **capellina** ; (2) c. de **chimenea**, chimney cap or cover, cowl, *see* **caballete** (3) ; (3) **horno de c.**, Peru, hood-furnace, *see* **horno** (2).
- CAPILLA**, pump. valve-chamber, *see* **caja** (4).
- CAPILLO**, cover or bonnet of a valve, bearing, etc. ; c. del **prensaestopas**, st. eng. gland of the stuffing-box [**caja** (5)], packing-gland (Ponce de León), *see* **casquillo** (2).
- CAPIM SAPÉ**, *see u. taquíara*.
- CAPIS**, *see* **capiz**.

- CAPITA**, a band, small seam or layer, *e.g.*, *c. del carbón*, a band of coal, *see capa* (1).
- CAPITAL**, capital of a department, state or country; *com.* capital; *c. no exhibido*, uncalled capital (Lucas).
- CAPITÁN**, Span. Am. (1) captain or (*c.m.*) overman or deputy overman, *comp. capataz* (1), *colero*, *rayador* (1), *sobrestante*; (2) foreman or boss, surface-boss, *see capataz* (3); *c. de galera*, Mex. the boss of the sheds under which the *tahonas* work (Lyon); *c. de patio*, the chief ore-dresser who has charge of the amalgamation floors (Lyon); under his direction the ore is broken up, and the waste separated therefrom and formed into *montones* (1); *c. del esporal*, the chief stableman (Lyon).
- CAPITANA**, (1) *see u. espeque* (1); (2) Cerro de Pasco, Peru, hemispherical stone vessel, 2 feet in diameter, for washing the pulp [*masa* (8)] (A. F. Pfordte).
- CAPITEL**, (1) arch. capital of a column or pilaster; (2) lid of a refining furnace (Velázquez), *see horno* (2).
- CAPIZ** (or *capis*), Ant. Col. timb. cap-piece, *see capa* (4). NOTE.—A corruption of the English word.
- CAPOEIRAS**, Braz. wooded tracts formed by the small trees and shrubs which spring up in lands that have been prepared for cultivation by destroying the virgin forests (*matos virgens*) (Henwood), *comp. capões*, *carrascos*, *catíngas*.
- CAPOËS** (orig. *caapoáno*, an island), Braz. natural clumps of shrubs and trees dotting the tablelands [*campos* (7)], *comp. capoeiras*.
- CAPONAZO**, Mex. blow on the hand of man holding drill, due to fault of striker (Dwight).
- CAPORAL**, keeper of horned cattle; foreman of a farm having the latter.
- CAPOTE** (cloak), (1) Mex. the bell-shaped iron cover fitting over the *campana* (4) or *capellina* in order to confine the heat; in Pachuca the cover is of boiler-plate, lined with firebrick, a space of one foot being left between the two; (2) Mex. a piece of blanket [*manta* (1)] wrapped round a candle in mines; (3) Ant. Col. superficial layer of vegetable earth (Uribe).
- CAPOTERA**, *mina c.*, Ant. Col. a placer in which the pay-dirt is at a very shallow depth (Uribe); a shallow placer (*placer*).
- CÁPSULA**, blast. cap or detonator, *syn. c. fulminante*, Mex. *casquillo* (1), *cebo* (4), *fulminante*, *pistón* (3); *c. sencilla* is the ordinary kind, *c. reforzada* has the fulminate covered by a little metallic plate with a hole in it.
- CAPTADO**, conduction of water or gases in a mine (Fr. *captage*).
- CAPTIVO**, Braz. pseudomorph, *e.g.*, anatase altered to rutile; for *c. de chumbo*, *see agulhas*.
- CAPURI**, Venez. kind of timber used in mining (G. P. Ashmore and C. Seale).
- CAQUEXIA DE MINEROS**, miners' cachexia or emaciation.

**CARA** (face), (1) face or "pane" of a hammer or anvil, *see u. boca* (6); (2) face of a valve (*válvula*); (3) upper surface of a piston [*émbolo* (1)]; (4) tread or bearing surface of a wheel; (5) quarr. panel of a stone, *syn. paramento* (1), *comp. liso* (1); face of a brick, *see Fig. 38*; (6) miner. facet of a crystal; (7) *c. de crucero*, miner. face of cleavage; (8) *caras*, sides of a fissure, *see labio* (2).

**CÁRABE**, amber, *see electro* (1).

**CARACOA**, Phil. small row-berge (*Velázquez*).

**CARACAS**, Ant. Col. a thin and hard layer of grey or reddish clay between the bed-rock [*peña* (4)] and the pay-dirt [*cinta* (3)], and in which gold is found in some alluvial mines (*Uribe*).

**CARACOL**, (1) Mex. a structure often exhibited by silver ores in certain districts, as in San Dimas, Durango, so called from its curved, spiral or shell-like appearance (*metal caracol*), *see plata* (2); (2) bor. crow's-foot or crow, *syn. caracola, gancho* (1), equiv. Fr. *caracol*; (3) *escalera de c.*, a ladder-way that winds spirally around a shaft, *see escalera* (1).

**CARACOLA**, *see caracol* (2).

**CARACOLÍ**, (1) Col. a tree with a very thick trunk used for making canoes—it has a rapid growth, attaining great height and bulk (*Uribe*); (2) metallic composition resembling pinchbeck (*Velázquez*).

**CARAGUATÁ**, Paraguay, a kind of hemp from a plant of the same name (*Velázquez*), *see cañamo* (1). **NOTE**.—The name is also given to the wild pine-apple.

**CARAMACATE**, Venez. green-heart, used for mining purposes, and supposed to be an indicator for gold (*G. P. Ashmore and C. Seale*).

**CARANIOMACHO**, Venez. timber, the best for all underground work (*G. P. Ashmore and C. Seale*).

**CARBÓN**, (1) charcoal, *syn. c. de leña* (Port. *carvão de lenho*); *c. de arranque*, charcoal made from the roots of trees; *c. de canutillo*, charcoal made from thin branches of oak, etc., *see calera* (3), *ebo*, *caunce*, *tizo*; (2) coal, *syn. c. de piedra* (Port. *carvão de pedra*), *c. de tierra*, *c. fósil*, *c. mineral*; *c. craso*, *c. graso* or *de cok*, caking coal—(**NOTE**.—*C. craso* also = bituminous coal)—*c. de gaz*, *c. de bujía*, cannel or gas-coal; *c. granado* or *c. almendrillo*, nuts or nut-coal (*see also galletas*); *c. grueso*, large coal; *c. menudo*, small coal [*see also carbonicillo* (1)]; *c. pardo*, lignite or brown coal (also sometimes called *c. de piedra*, *c. fósil*); *c. seco* or *magro*, non-caking coal, *see hulla*; (3) cinder, *c. de piedra pasada*, coke (*cok*); (4) graphite, *see grafito*; (5) black pencil, *see carboncillo* (2).

**CARBONADO**, Braz. "carbonate" or black diamond; it occurs generally in irregular rounded nodules varying in size from a pea to a mass exceeding one pound in weight; S.G. = 3-3.42 (diamond = 3.48 to 3.55), *see diamante*.

**CARBONATO**, carbonate; *c. de hierro*, spathic iron, *see siderosa*.



**CARBONCILLO**, (1) small coal, coal-dust, culm, dross, *syn.* **cisco** (2); (2) black crayon, *see* **carbón** (5).

**CARBONEAR**, to make charcoal [**carbón** (1)].

**CARBONEO**, making charcoal [**carbón** (1)].

**CARBONERA** (Port. **carvoaria**), (1) pile of firewood covered with clay for making charcoal (Acad.); place where charcoal is made (Velázquez), *comp.* **tizonera**; (2) coal-hole or coal-cellar; (3) colliery or coal-mine, *see* **hullera**.

**CARBONERÍA**, (1) coal-yard; (2) coal-shed; (3) coal-mine, *see* **hullera**.

**CARBONERO**, (1) carrier, maker or seller of charcoal [**carbón** (1)]; (2) collier or coal-miner, *syn.* **hullero**, *see* **minero** (2); (3) coal-merchant; (4) coal-ship or collier; (5) Mex. coke- or coal-wheeler (Dwight); (6) colliery or coal-mine, *see* **hullera** (1).

**CARBONILLA**, pressed coal-dust, a mixture of two parts of coal-dust and one of earth for making crucibles (Ponce de León), *see* **crisol** (1).

**CARBONIZACIÓN**, carbonisation, charring, coking, *see* **carboneo**.

**CARBONIZAR**, to char, to make coke.

**CARBUNCLO**, **CARBUNCULO**, carbuncle, *see u.* **piropo**.

**CÁRCAMO**, (1) drain or conduit which carries off earthy matters from the **tin**as, when washing the amalgam; it is frequently cleared out and washed for mercury (Lyon, 1826-28); it is arched over and the bottom has riffles [**tendidos** (5)]; (2) drain in mines; (3) wheel-pit, *syn.* **cárcavo**, equiv. Port. **inferno**; (4) flume, *see* **caz**; (5) Fresno, Zac. Mex. slime-pit (Dr. Percy); (6) Mex. penstock of turbine (Dwight).

**CARCÃO**, Port. matrix of gold in gold mines (Elwes), *see* **matriz**.

**CÁRCAVA**, gully made by torrents of water (Velázquez), *comp.* **rambla** (2).

**CÁRCAVO**, *see* **cárcamo** (3).

**CARCEL**, (1) timb. frame of a shaft, *see* **cuadro** (1); (2) Zac. Mex. timb. stemple-notch, *see* **huida**; (3) **cárceles**, pump. guides of spear-rods, *see u.* **guía** (4); (4) mech. wooden clamp, holder or collar; (5) unity of measure for sale of firewood—in Segovia, Sp. = 100 cubic feet, in Valsain = 160 (Acad.), *see* **cuerda** (5); (6) groove or channel of a sluice-gate [**compuerta** (2)] (Acad.).

**CARCOMA**, (1) wood-borer, the larva of various beetles which burrow in wood, *see* **comején** (2), *comp.* **comején** (1); (2) dust made by the wood-borer, *comp.* **caries seca**.

**CARCOMAR**, to erode (of the banks of a river), *see* **derrubiar**, *comp.* **gastar**.

**CARDENILLA**, Batopilas, Chih. Mex. proustite, *syn.* **metal de cardenillo**, *see u.* **pinta** (1), **plata** (2).

**CARDENILLO**, (1) gold-mill. verdigris, *see* **verdete**; (2) *see* **cardenilla**.

**CARENA**, Mex. upright stanchion for supporting machinery, *see* **montante** (1).

**CARETA**, mask of a pneumatophore ; it is provided with spectacles (gafas—Fr. lunettes garnies), and apparatus for closing the mouth (tapaboca—Fr. ferme-bouche), and nostrils (aprietanarices—Fr. pincette), having at the back an inflatable rubber cushion (almohadilla—Fr. réservoir).

**CARGA**, (1) load, freight ; *c. útil*, useful load ; *bestia de c.*, cargo beast ; (2) a mule-load or 380 lb., in Mex. 300 lb. Spanish or 12 arrobas = 304.332 lb. avoird., in Peru (generally) 250 lb. or 10 arrobas, in Col. usually 200 lb. or 8 arrobas ; in Guan. Mex. 1 *carga* of ore = 14 arrobas ; *see cocha* (3), *tercio* ; (3) Castile, Sp. a corn measure containing 4 fanegas or bushels, elsewhere 3 fanegas ; in Mex. (generally) 12 fanegas of 12 almudes = 18 bushels ; Guan. Mex. = 2 fanegas ; 1 *carga* of charcoal contains 12 banastas ; (4) blast. charge, *syn. cargo* (2) ; met. smelting charge, *see carguero* (3), *cebo* (2), *lecho* (4), *mezcla* (2), *plancha* (8), *revoltura* (1) ; *c. de arrastre*, charge for an *arrastre* usually about 200 lb. avoird. ; (5) impost, duty, toll, tax, *see derecho* (2) ; *c. real*, king's tax, land tax ; (6) Ant. Col. pebbles and other stones, or gravel, occurring in placers, *see u. cargado, da, guijarro* (1) ; (7) Ant. Col. stones, sand and vegetable material brought down by floods and sometimes deposited on the banks (Uribe), *see guijarro* (1) ; (8) loading or filling, *e.g.*, *c. á la pala*, *c. á la tolba*, *see cargo* (1), *cargamiento*, *carguío* (2) ; (9) *c. motriz*, *see depresión* ; (10) cargo, the loading of a ship ; (11) Sandia, Peru, overburden of an ordinary placer [*aventadero* (2)], *see montera* (3).

**CARGADERO**, (1) loading or unloading place ; (2) lintel, *see dintel*.

**CARGADO, DA**, adj. loaded ; *bomba cargada*, pump full of water ; *mina cargada*, Ant. Col. a placer containing many large stones (Uribe), *see carga* (6).

**CARGADOR**, (1) Mex. in the *patio* process, the man who carries the amalgam to the *tinajas*, and cleans them out (Lyon) ; (2) any man who carries burdens, *see faenero* (1), *tamén* ; freighter, *comp. arriero, carguero* (1) ; (3) Ant. Col. the rope or girdle by which *bultos* are raised ; (4) one who loads a wheelbarrow, etc., *comp. alizador*.

**CARGADORA**, Mex. charging-vat, *see tina* (1).

**CARGAMIENTO**, loading or filling, *see carga* (8).

**CARGAR**, (1) to load ; (2) mech. prep. to feed a mill ; met. to charge a furnace, etc., *see alimentar, cebar* (2) ; *c. el barrenó*, blast. to charge a blast-hole ; (3) *c. la bóveda*, mas. to load waste on the top of an arch (*arco*), or to fill it with masonry ; (4) *cargarse*, *c. la rueda de un molino*, Ant. Col. said of a wheel when weighted in its lower portion by water which has soaked into it, whereby it will not work.

**CARGO**, (1) burden, loading, *see carga* (8) ; (2) blast. charge, *see carga* (4) ; (3) Peru, the first portion of mercury added to an amalgamating charge (Dwight) ; (4) load of stone, approximately equal to one-third of a cubic metre (Acad.) ; (5) Granada, Sp. measure = one cubic

vara ; (6) com. total amount of what has been received in a general account (Velázquez).

**CARGUERO**, (1) Col. man (generally Indian) who carries travellers in a kind of saddle over bad roads, mountain passes, etc.—he will bear 6 or 7, and even up to 9 arrobas (Humboldt) ; *andar en c.*, to travel in the way described, *comp.* **caballito** (2), **cargador** (2) ; (2) Ant. Col. alluv. m. deposit of stones, pebbles, etc., taken from the placer in order to isolate the gold (Uribe) ; (3) Mex. met. charge (Dwight), *see* **carga** (4).

**CARGUÍO**, (1) a load ; (2) loading (into wagons, etc.), *see* **carga** (8).

**CARIADO, DA**, adj. rotten ; **cuarzo cariado**, rotten quartz.

**CARIES SECA**, timb. dry-rot, *comp.* **carcoma** (2).

**CARMÍN**, Ant. Col. red ochre, from the decomposition of pyrites, found in veins (Angel) ; mineral highly charged with oxide or carbonate of iron (Uribe) ; according to Gamba identical with **colorados** (1) or **gossan**.

**CARNE DE VACA**, (1) Potosí, Bol. a coarse variety of galena in big crystals, it is relatively a low-grade silver ore (M. Roberts), and is generally mixed with grey copper ore (Dwight), *see* **galena**, **plata** (2), *comp.* **chini-liga** ; (2) Hualgayoc, Peru, red amorphous blende (blenda), phosphorescent on fracture (Santolalla).

**CAROMBÉ**, Braz. alluv. m. a shallow wooden box, with sloping sides, for carrying gravel, and also for use in draining workings.

**CARPINTERÍA**, (1) carpenter's shop ; (2) carpentry.

**CARPINTERO** (Port. **carpentein**, **carpinteiro**), carpenter, *syn.* **maderero** (2), *see* **ademador** ; **c. de carretas** or **de prieto**, wheelwright ; **segundo c.**, carpenter's mate.

**CARRACA**, ratchet brace, *see* **berbiquí**.

**CARRANA**, Peru, light rawhide shovel for throwing **taquia** into a furnace (Dwight), *see* **pala**.

**CARRANCHO**, Remedios, Ant. Col. (1) decomposed country (generally granite) from 2 to 4 feet thick, carrying auriferous iron pyrites and a little free gold between the vein and its walls, and sometimes in the vein itself (F. Owen) ; the miners sometimes call it **cascajo** (12) (for origin of term *see* **carranchoso**), *comp.* **formación** (2) ; (2) soft shaley or schistose "country" in which the veins are unproductive, *syn.* **peña** (5) **boba**.

**CARRANCHOSO, SA**, adj. Ant. Col. rough, scaley, harsh (Uribe).

**CARRASCAL**, Mex. honeycombed quartz, generally barren (Dwight), *see* **cuarzo**.

**CARRASCOS**, Braz. close-growing shrubs about 3 or 4 feet high, found on more elevated tracts than the **catingas**.

**CARRERA**, (1) high road, *see* **camino** (1) ; (2) Madrid, Sp. a broad and long street, *see* **camino** (1) ; (3) alley, *see* **camino** (1), *comp.* **callejón** (1) ; (4) kind of joist, *see* **u. viga** ; (5) **c. del émbolo**, stroke of the piston (**pistonada**) ; **c. de válvula**, travel of the valve, *see*



corrida (1); c. de la excéntrica, throw of the eccentric; lift of a hammer, *see* alcance (2), *u.* caída (1), curso (1); (6) c. de ladrillos, piedras, course, layer of bricks, stones, etc., *see* canada (2); (7) anillo de c., piston-ring, equiv. Fr. bague de carrière; (8) carreras, timb. longitudinal pieces of timber used (a) in spilling in connection with the leg-pieces of the frame, *see u.* labor (2), (b) in tunnelling by the English method, (c) common to a row of props, and supported by the latter (*comp.* estribado), (d) in the subsidiary supports of a large set for levels, *see* hilera (2); (9) Sierra de Cartagena, Sp. gallery (galería) used by gavias.

**CARRERO**, charge-wheeler (Dwight); trammer, *see* carretero (1); mas. stone-carrier (Ponce de León).

**CARRETA**, (1) long narrow cart, wagon, *see* carro (1); (2) Span. Am. wheelbarrow, hand-barrow, *syn.* Sp. carretilla de mano, carretón de una rueda, carrillo de mano, equiv. Fr. brouette, Ger. Laufkarre, Schubkarre, *see* cajón (1) and (2), capela, carro (5), parihuela (1), vara (3).

**CARRETADA**, (1) cart-load, wagon-load = 120 arrobas or 1380 k. (Ponce de León), *see* carro (7); (2) wheelbarrow load, hand-barrow load.

**CARRETAJE**, cartage.

**CARRETAL**, ashlar or rubble-stone roughly dressed, *comp.* mam-puesto (1), sillar.

**CARRETE**, **CARRETEL**, *see* bobina (1) and (2).

**CARRETERA**, high road, *see* camino (1).

**CARRETERO**, RA., adj. camino carritero, road for carriages, etc., *see u.* camino (1), carril (1).

**CARRETERO**, (1) wheeler or trammer, *syn.* apire (1), arrastrador (1), Peru, capachen (boy), Mex. and Peru, carrero, Mex. and Col. cochero, vagonero, equiv. Fr. rouleur, (Belgium) herscheur, Ger. Schlepper, Fördermann, *comp.* tenatero; (2) cartwright; (3) carter, wagoner, *syn.* carruajero, *see* acarreador.

**CARRETIL**, hierro c., *see u.* hierro (1).

**CARRETILLA**, (1) wheelbarrow, *see* carreta (2); (2) rail. bogie (Ponce de León), *see* carretón (4).

**CARRETILLERO**, wheelbarrow-man, barrow-man.

**CARRETÓN**, (1) small cart [carro (1)] in the shape of an open chest; (2) wheelbarrow, etc., *see* carreta (2); (3) truck, dray or van; (4) rail. bogie or bogie-frame, *syn.* carretilla (2).

**CARRETONERO**, driver of the carretón (1); drayman, truckman.

**CARRIEL**, Col. a kind of satchel or large purse (guarniel) covered with skin (generally the otter's) and containing several compartments for carrying paper money, tobacco, etc.

**CARRIL**, (1) rut, cart-rut; (2) narrow road where one cart only can pass at a time, *see* camino (1); (3) rail. rail, *syn.* riel (2), vía (7), equiv. Port. trilho, *see* cuello (3), ferrocarril, suiche; c. americano,

c. de patín, flat-bottom rail (Fr. rail à patin, rail Vignole); c. de aguja, switch-rail; c. de canal, de crucero or en H, tram-rail; c. de seta, bridge-rail (Fr. rail à champignon); c. de doble seta, double bridge-rail (Fr. rail à double champignon); for flat iron rails, *see* barra (10); (4) c. de alambre, wire tramway.

**CARRILERA**, S. Am. railroad track (Ponce de León), *see* vía (1).

**CARRILERO**, ore-carrier.

**CARRILLO**, (1) small cart, *see* carro (1); (2) c. de mano, wheelbarrow, *see* carreta (2); (3) block pulley, *see* polea (1); (4) mech. slide-rest, drill-stock (Ponce de León).

**CARRITO**, (1) carritos guías, on automatic inclined planes, a pair of small cars in front of the wagon when descending, to which the wire-rope is attached (Molina); (2) c. contrapeso, *see* u. contrapeso (1).

**CARRIZO**, Mex. small hole in rock for wooden plug (Dwight), *comp.* huida (1).

**CARRO**, (1) cart, *see* carreta (1), carretón (1), carrillo (1), carromato, carruaje, carruco, *comp.* galera (8); (2) wagon or mine-car, c.m. box, corf, (S. Staff.) skip or skep, (S. Wales) tram, tub, *syn.* coche (1), vagón, equiv. Fr. wagon, wagonnet, berline, Ger. Förderwagen, Grubenwagen, *see* bastidor (2), cajón (2), *comp.* perro; c. de volcar, c. volcador, dumping-car or tippler, c. de volteo, c. vaciador, ordinary discharging-car; (3) railroad-car, *see* coche (2), trueque; (4) c. de perforadoras, bor. drill-carriage, *see* bastidor (1); (5) c. de mano, large handbarrow worked by three men, *see* carreta (2), parihuela; (6) Mex. charging-buggy (Dwight); (7) cart-load, *see* carretada (1); (8) Sant. Sp. unit of superficial measure equal to 44 square feet (Acad.).

**CARROMATO**, a long narrow cart with two wheels and tilt, for transporting goods, etc. (Velázquez), *see* carro (1).

**CARRUAJE**, all sorts of vehicles for transporting persons or goods (Velázquez), *see* carro (1).

**CARRUAJERO**, carrier, carter, wagoner, *see* carretero (3).

**CARRUCO**, small cart used in mountainous parts of the country for transporting salt and other things, with solid wheels and turning axles (Velázquez), *see* carro (1).

**CARTA**, (1) letter; (2) royal ordinance; (3) c. geográfica, map; c. hidrográfica, chart, *see* mapa, plan (5); (4) c. de referencia, surv. bench-mark; (5) c. poder, power of attorney by letter, *see* poder (1).

**CARTABÓN**, (1) plott. triangle or set square; (2) angle of a roof; (3) surv. optical square.

**CARTEL**, placard, handbill, poster.

**CARTUCHO**, cartridge (Fr. cartouche), *syn.* cohete (1), *see* bombillo (4); cartuchos de cal grasa viva, lime cartridges (used for bringing down coal).

**CARVÃO**, Port. carbon, *see* u. carbón (1) and (2).

**CARVOARIA**, *see* u. carbonera.

**CARVOEIRO**, Port. coal-man, coalheaver.

**CASA**, house ; *c. de fundición* (Port. *casa de fundição*), smelting-house, in the patio process, casting-house ; *c. de moneda* (Port. *casa de moeda*), mint, *syn. ceca, comp. callana*.

**CASAR METALES**, Peru, to mix ores for amalgamation or smelting (Dwight).

**CASARÓN, CASERÓN**, grandes caserones huecos, Chile, large hollow chambers left in winning deposits, *syn. rajos* ; **casarones**, Arg. in the Gualilan mineral in the Tontal range, vast chambers, over 100 feet high and often 50 feet wide, worked out of an immense mineral vein, attaining a width in places of 30 feet or more. They were accidentally discovered in 1751 by a Chilenian cattle-herder (A. Hausmann), *comp. sacados, salón* (2).

**CASCADA**, cascade or small waterfall, *see salto* (3).

**CASCAJAL, CASCAJAR** (Port. *cascalheira*), place full of gravel or pebbles, *see guijarral*.

**CASCAJEAR**, (1) to win cascajo, *syn. tumbar el cascajo* ; (2) Ant.

Col. to take up the small stones from a ground-sluice [canalón (2)] with cachos (2), in order to get it into running order [*see colgar* (2)] (Uribe).

**CASCAJEO**, *see cascajear* (1).

**CASCAJERO**, Ant. Col. an alluvial mine already worked but which still contains gold (Uribe).

**CASCAJO**, (1) aggregation of small stones, gravel (*see u. arena*), *syn. casquijo, grava, guijo* (1), equiv. Port. *cas-calho* (1), *comp. guijarro* (1) ; (2) El Caratal, Venez. alluv. m. decomposed schist, forming the bed-rock [roca (6)], *see Figs. 20 and 21* ; (3) El Caratal, Venez. vein-mining, a tender argillaceous red or yellow stone above the diorite (piedra azul), and passing insensibly into it (C. Monchot) ; bluish clay, often mixed with quartz in the salbandes, in upper decomposed portion of the "country" ; a bluish felspathic rock of fine grain, often schistose near the vein, classed by Cumenge among diorites (Fuchs and De Launay), *see Fig. 22, comp. carrancho, cuarache*,

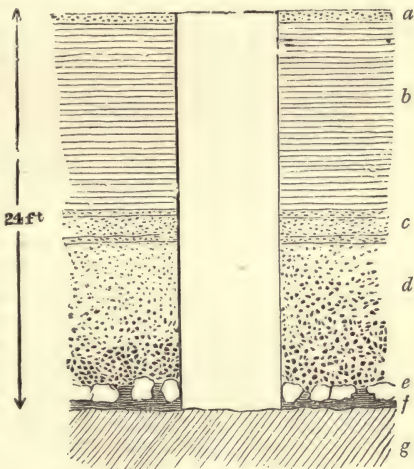


FIG. 20.—Cascajo (2) (after Dr. Foster).

*a*, soil ; *b*, red clay ; *c*, soft clayey "moco de hierro" ; *d*, hard brown iron ore ("moco de hierro") with pieces of quartz and a little clay ; *e*, blocks of vein quartz, often auriferous ; *f*, "greda," or pay-dirt, a yellow ferruginous clay containing nuggets and small grains of gold ; *g*, "cascajo," or decomposed schist, forming the bed-rock.



formación (3); (4) *cascajos*, Peru, pockets of ore of enormous size, consisting of a kind of quartz, mixed with a yellow ochreous clay, which contain 0.19 per cent. of finely disseminated native silver

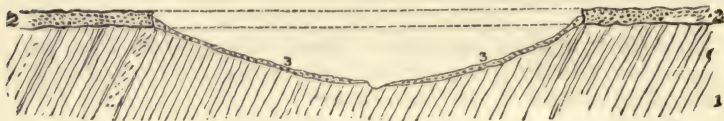


FIG. 21.—*Cascajo* (2) (after Dr. Foster).

1, "*cascajo*" (schist), or felstone, forming the bed-rock of 2, a ferruginous gold-bearing gravel ("*moco de hierro*"); 3, "*tierra de flor*," or red ferruginous earth containing nuggets of gold—a superficial gold-bearing rain-wash from denudation of 2.

(Domeyko); at Cerro de Pasco, contain from 50 to 85 per cent. of native silver, the rest sulphides and antimonates, or with lead carbonate (R. T. Mason); according to Raimondi, the *cascajo* of Cerro de Pasco is a sandstone, profoundly altered by eruptives; see *bolsa* (1), for *pacos y cascajos* see *u. pacos* (1), *comp. colorados*; (5) *c. blando*, Calamahi, L. Cal. Mex. soft talcose schist, the bed-rock [*roca* (6)] of gold placers; (6) *c. duro* is a harder clay-slate than (5), which forms natural dams, and in which the coarse gold occurs in the *cañadas* while the finer particles are found in (5); at the intersection of the dam with the soft rock is found the gold channel (*el canal de oro*) (J. M. Ramos), see *u. asiento* (7); (7) French Guiana, highly altered rock, consisting of red earth, argillaceous at the surface, and rocky at the bottom (Fuchs and De Launay); (8) Durango, Mex. ferruginous quartz, see *cuarzo*; (9) Chile, depression and valleys in granite frequently contain horizontal beds of *cascajo*, shingle, gravel, sand and clay—they are coarse auriferous gravels, *comp. cascalho* (2); (10) Mex. waste rock (Dwight), see *desecho* (3); (11) mas. chips from dressing stones; rail. ballast material, see *balaste*; (12) see *carrancho* (1).

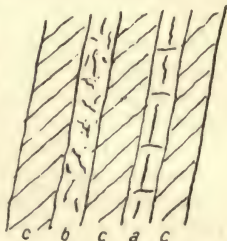


FIG. 22.—*Cascajo* (3) (after Dr. Foster).

*a*, quartz lode; *b*, "*porfiro*"; *c*, *cascajo* (3).

**CASCALHEIRO**, Port. place full of stones or gravel, see *cascajal*.

**CASCALHO**, (1) Port. pebbles, gravel, *syn. rebo*, see *cascajo* (1); (2) Minas Geraes, Braz. sand, gravel, pebbles and subangular rocks of large size, imbedded in ferruginous clay. All these, as well as the particles and grains of gold mixed with them, may be traced to their parent strata in the neighbouring *serras* (Henwood); diamond fields, Braz. a mixture of clay and quartzose gravel found in the beds of rivers and containing diamonds, etc; sometimes = *grupiaras*; a kind of auriferous and diamond-bearing gravel; it is a cement gravel

of quartz pebbles found underlying drift clays, gravels and sands of rivers ; *c. virgem*, the deeper and older gravel of a river-bed (Spix and Martius), *comp. cascajo* (9).

**CÁSCARA**, (1) bark of trees, *see corteza* ; (2) Huelva, Sp. copper precipitates obtained from mine water ; cement copper (Lucas).

**CASCARILLA**, *see u. tequezquite*.

**CASCOS**, *see u. sección*.

**CASCOTE**, rubble-stone, *see mampuesto* (1).

**CASERÍO**, village or very small town, *comp. pueblo* (1).

**CASERÓN**, *see casarón*.

**CASQUIJO**, (1) *see cascajo* (1) ; (2) ballast material, *see balaste*.

**CASQUILLO**, (1) Mex. detonator (Venator), *see cápsula* ; (2) *c. del prensaestopas*, st. eng. gland of the stuffing-box (Ponce de León), *see u. capillo, empaquetado* ; (3) ferrule, socket, *see regatón* (3).

**CASTAÑA** (chestnut), an abandoned mine (Velázquez), *see u. abandonado*, *da*.

**CASTAÑO**, chestnut-tree (*Fagus castanea*), sometimes used in timbering, *see madera*.

**CASTELLANO**, (1) ancient Spanish coin ; (2) one-fiftieth part of a mark [marco (1)] of gold ; 1 *castellano* = 96 *granos* or 8 *tomines* ; the value of the *c.* of gold of 22½ carats (*quilates*) was fixed at 17 reales 11 maravedis on October 25, 1649 (Fonseca and Urrutia) ; in Colombia 1 *c.* = 2 pesos, 1 peso = 4 *tomines*, 1 *tomin* = 12 *granos*, 100 *c.* = 1 libra ; 6·76 *c.* = 1 ounce troy, 6·25 *c.* = 1 *onza* ; *see u. dineral, comp. oitava* ; (3) Mex. met. furnace about 48 inches high and 10 inches square, used for lead-smelting, *syn. horno* (2) *castellano*.

**CASTIGAR**, Mex. to smooth or plane surfaces of rock or board (Dwight).

**CASTILLETE**, hoist. pulley-frame, *see horca* (1) ; bor. shear-legs, *see caballete* (7) ; *c. grúa*, crane pulley-frame (Fr. *chevalement-grue*).

**CASTILLO**, (1) Mex. the frame of the stamper [pilón (4)] ; (2) hoist. pulley-frame, *see horca* (1).

**CASTINA**, fluor or flux, *see fundente* ; calcareous flux used when the ore contains much clay (Acad.).

**CATA**, (1) a mine [*mina* (2)] denounced for trial ; (2) a mine of shallow depth, *see mina* (2) ; (3) a placer (placer) ; the first placers in Brazil were called *catas* (A. J. Bowie) ; on the Gold Coast, West Africa, place where women wash gold (Dr. Karl Futterer) ; (4) a pit made in quest of a vein, a costeaning-pit, or test-pit ; in Ant. Col. an artificial pit in *aventaderos* (1) and *labores* (4) *bajas*, made in order to examine the richness and depth of material (Uribe) ; a *cata* or *calicata* or *excavación* in Spain must not exceed 10 m. long or deep ; at Minas Geraes, Braz. a *cata* is a rounded pit sometimes dug to the depth of 15 to 20 m. (*cata*, Port. = a view, a search) ; *syn. Venez. barranco* (3), *corte* (5), *comp. picado* ; *cala* is very similar (*hacer cala y cata*, to examine a thing for the purpose of ascertaining its quantity and quality, hence *calicata*) ; *catatita* or *piquete* (1) is a small *cata* ;

- (5) Mex. subsidence (Venator), *see* **revenimiento** ; (6) boring-auger (Ponce de León), *see* **barrena** (1).
- CATACORTE**, Ant. Col. (1) opening or trench made to examine the structure and quality of a formation, *see* **zanja** (1) ; (2) open cut of large size made for the passage of a ditch, or for cutting a vein (Uribe), *comp.* **brecha** (3), **zanja** (1).
- CATAR**, *see* **catear**.
- CATARATA**, (1) cataract or large waterfall, *see* **salto** (3) ; (2) cataract of a pumping-engine.
- CATATITA**, *see u.* **cata** (4).
- CATE**, Phil. the tenth part of **chinanta**, or a weight equiv. to 1 lb. 6 oz. Spanish, or 632·63 g. (Acad.), *see* **pico** (7).
- CATEADO**, DA, pp. of **catear** ; **una mina cateada**, or **una veta cateada**, a mine or vein that has **catas** (4) sunk on it.
- CATEADOR**, prospector, *syn.* **buscador**, **catero**, Fr. Guiana, **merodeador**, Mex. **pintista**, *comp.* **buscones** (1), **explorador**, **faiscador**.
- CATEAR**, (1) to search for minerals or new mines, to prospect, *syn.* **catar**, **buscar**, *comp.* **explorar**, **faiscar** ; (2) Col. to make a small pit [**cata** (4)] to prove the probable richness of a mine ; (3) Col. to pan ; (4) Col. to dolly.
- CATEO**, prospecting, etc.
- CATERO**, prospector, *see* **cateador**.
- CATINGAS**, Braz. forests of trees generally small and deciduous, forming a connecting-link between the virgin forests (**matos virgens**) and the **carrascos** (Henwood), *see* **capoeiras**.
- CATODO**, el. cathode or negative pole.
- CATRINES**, Mex. name given by Indians to foreigners generally, and includes Spaniards (**gachupines**), French (**gavachos**), and Germans, English and North Americans (**gringos**) (Brackel-Welda).
- CAUCE**, (1) top. the channel of a river, *see* **álveo** (1) ; (2) leat, *see* **acequia**.
- CAUCHO**, india-rubber, rubber, *syn.* **goma elástica**, **hule** (2), Peru, **jebe** (2).
- CAUDAL**, c. de un río, discharge of, or quantity of water in, a river, *syn.* **venaje**, *see* **descarga** (3).
- CAUDALOSO**, SA, adj. carrying much water (of rivers, lakes, springs, etc.).
- CAUNCE**, Ant. Col. tree of highly resisting and fibrous wood, with oblong leaves and flowers of a beautiful golden yellow colour—its roots produce excellent charcoal for smiths' shops (Uribe).
- CAVA**, (1) obs. ditch, *see* **acequia** ; (2) **cavas**, Reocin, Santander, Sp. in the calamine quarries, successive cuts or slices made in the deposit on either side of a central shaft or winze and following the natural talus of the rock. The cut is made with a **cortadera** (2), a kind of shovel [**pala** (1)] provided with a long handle (Molina), *comp.* **tajos** (5).



- CAVERNA**, (1) cavern, cave, *see* *cueva* (1); (2) hollow in a rock, (Derb.) swallow, *comp.* *drusa*.
- CAVIDAD**, (1) cavity, excavation; (2) *c. de un filón*, hole or vug (Ponce de León), *see* *drusa*.
- CAVOUCAR**, Port. to dig stones from a quarry (Elwes).
- CAVOUCO**, Port. the hollow made in a quarry (Elwes).
- CAVOUQUEIRO**, Port. quarryman, *see* *cantero* (2).
- CAZ**, flume, *syn.* *canal* (5), Ant. Col. canoa (1), cárcamo (4), chiflón (2), saetin, *see* *mampuesto* (3), *prensa* (1), *rega*, *talabordones* (1). NOTE.—*Caz* also = canal, trench or ditch near rivers for irrigation (*see u. tambre*), and mill-race, conduit or leat, *see* *conducto*, *desaguador*, *presa* (2).
- CAZADERA**, Mex. timb. hitch, *see* *huida* (1).
- CAZAR**, Mex. to ram with a piece of timber (Dwight).
- CAZEADOR**, Mex. amalgamator, *see* *amalgamador*.
- CAZO**, (1) large kettle or boiler, *see* *caldera* (1); (2) Mex. a caldron or vessel with a copper bottom (*fondo*) for heating and amalgamating the ore, *syn.* *fondo* (1); (3) *beneficio de c.*, the *cazo*, caldron or hot amalgamation process invented by Alonso Barba, at Potosí, Bolivia, in 1590, *syn.* *amalgamación en caliente*, *see* *polveo*, *u. prueba* (1); (4) *metales de c.*, Mex. ores containing silver in a state of chloride, bromide or iodide (generic name = *plata verde*), *comp.* *cálidos*.
- CEBA**, *see* *cebo*.
- CEBACHORES**, Mex. in the *patio* process, the men who feed the stamps and are paid 6½ reales per day (Lyon, 1826-8), *comp.* *alimentador*.
- CEBADA**, barley; *paja de c.*, barley-straw given with maize to mules and horses working *malacates* (1) etc., *comp.* *cebo* (5).
- CEBADERA**, (1) horse-bag, *see* *cebo* (5), *comp.* *morral*; (2) a sort of basket (*canasta*) or bucket for feeding furnace [*horno* (2)].
- CEBADERO**, met. feed-opening or mouth of a furnace, etc., *see* *boca* (7).
- CEBADO**, *see* *cebar* (4).
- CEBADURA**, Hid. Mex. surface ore or *metal flor* (A. del M. de F.).
- CEBAR**, (1) Mex. to smelt rich ore in a refining-furnace, *see* *cebo* (1); (2) Mex. to feed or supply a furnace with materials for smelting, to charge, *see u. cargar* (2); (3) Mex. to add more mercury to the *torta*, etc., *see* *cebo* (3); (4) *c. el barreno* (1), blast. to prime the drill-hole; (5) *c. la bomba*, to prime a pump or fill it with water in order to drive out the air; (6) generally to start an engine, etc.
- CEBO**, (1) *metal de c.*, Mex. very rich silver ore run down in refinery furnaces (Gamboa), *syn.* *mogrollo*, *see* *cebar* (1), *comp.* *molonque*; (2) charge for a smelting-furnace, *see u. carga* (4); (3) Mex. in the *patio* process, the second addition of mercury to the *torta* in the *incorporo*, *syn.* *ceba*; (4) blast. priming as of gunpowder; *cebo* or *c. fulminate*, percussion cap (*cápsula*); (5) a feed, as oats for horses, *see* *cebadera* (1), *comp.* *cebada*; (6) cart-grease (Velázquez), *see* *sebo*; (7) Ant. Col. pure or dolomitic carbonate of lime deposited in

- veins by infiltration (M. U. Angel), *see* caliza ; (8) pump. priming, *see* cebar (5).
- CEBOLLA** (onion), round part of a lamp (lámpara) into which oil is put ; for *candil de c.*, *see u. candil*.
- CECA**, a mint, *see casa* (3).
- CEDAZO**, (1) hand-sieve, small sieve for assay purposes, *syn. zaranda* (1) *de mano*, *comp. cernidor* (1), *criba*, *harnero*, *sano-sano* ; (2) jiggling-sieve, *see tamiz* ; *c. oscilante*, brake-sieve, jiggling-sieve (Ponce de León).
- CEDRO**, cedar (cf various species), *syn. Peru*, *cibrú*, *see tuya*.
- CÉDULA**, decree, order, bill, schedule or writing ; warrant, share, scrip ; *c. de aduana*, a permit ; *c. de cambio*, bill of exchange ; *c. real*, royal letters patent (Newman and Baretti).
- CEGAR** (to blind), *c. un pozo de mina*, to cover a shaft (Ponce de León), *see u. hundido*, *da*.
- CEJA** (eyebrow), (1) Mex. in testing the *torta* in the *patio* process, the silvery white crescent of amalgam that forms at the head of the vanning product. The amalgam in this very finely divided condition is known as *limadura* (4) ; (2) *hacer la c.*, Ant. Col. to form the gold into a half-moon or eyebrow by inclining the *batea*, giving it a slight movement with one hand, and dropping a little water on it from the other. Gold washers in Colombia are very expert at this, *see also lengua* (4).
- CEJO**, angle formed by the intersection of two galleries (Ponce de León).
- CELADOR**, *see revisador* (1).
- CELEMÍN**, dry measure = one-twelfth of a *fanega* ; half a *celemín* = *maquila* (4).
- CELLAR**, *hierro c.*, *see u. hierro* (1).
- CELOSIA**, lattice-work, *see u. puente* (1), and *tirante* (1), *viga*.
- CEMENTACIÓN**, *beneficio por c.*, met. cementation process, *see u. cemento* (4).
- CEMENTAR**, met. to put iron bars in solutions of salts of copper in order to precipitate the latter metal.
- CEMENTO**, (1) very hydraulic lime or cement, *syn. cemento*, *cimiento* (2), *see argamasa* (2), *betún* (2) ; (2) geol. cementing material of a breccia or conglomerate, *see u. argamasoso*, *sa* ; (3) any uniting composition which is plastic when applied, but hardens in place ; (4) met. brown deposit obtained in the precipitation tank by the addition of sulphate of iron to the solution (chlorination process) ; (4) met. material in which the metal is embedded in the cementing furnace [*horno* (2) *de cementación*].
- CENDRA**, (1) met. paste of bone-ash or other material for making cupels [*copela* (1)] or tests [*copela* (2)] ; (2) cupel, *see copela* (1).
- CENDRADA**, (1) Mex. the bottom of the refining or cupelling furnace, made of very fine earth or ashes of plants, which have been lixiviated, the test, *syn. copela* (2) ; (2) Mex. materials of which a cupelling test

is made, *see* **cendra** (1); (3) Chile, crucible of a copper-smelting furnace, *see* **crisol** (2).

**CENDRILLA**, Mex. small vessel or refining furnace (reverberatory) for rich ores, *syn.* **galeme** (3).

**CENICERO**, ash-hole, ashpit, ashpan, *see u.* **buitrón** (2).

**CENICILLA**, Mex. black earthy residue obtained in reducing quicksilver ores in the old Mexican gallery furnace (J. Mactear), *comp.* **ceniza** (2), *see* **mercurio** (2).

**CEÑIDO**, Mex. narrowed (Dwight).

**CENIT**, surv. zenith.

**CENITAL**, surv. **angulos cenitales**, zenith or vertical angles, as distinguished from horizontal angles (**azimutes**).

**CENIZA**, (1) ashes, cinder; **c. de hueso**, bone-ash, *see* **cendra** (1); (2) Huitzuco, Guerr. Mex. a black ash, or mixture of antimony oxide, soot, and mercury (30 per cent.) obtained from the condensing chambers, *comp.* **cenicilla**, *see* **mercurio** (2).

**CENIZO, ZA**, adj. ash-coloured or resembling ashes; for **plata ceniza** or **metal** (3) **cenizo**, *see u.* **plata** (2).

**CENIZO-NEGRO**, region de, Chañarcillo, Chile, the second zone still containing chloride of silver, but in which ruby silver first appears; it is a transition zone, gradually merging into the **negros** (5) zone proper.

**CENOTE**, deposit of water found in Mexico and elsewhere in America, generally at a great depth in the centre of a cavern (Acad.), *see* **cueva** (1).

**CENSO**, quit-rent; census.

**CENTRO**, (1) centre; (2) height and depth of a thing; (3) axis (of a stream, etc.), *see* **eje** (1).

**CEPILLAR**, carp. to plane, *see* **acepillar**.

**CEPILLO**, (1) carpenter's plane, *syn.* **juntera**, **repasadera**; **c. bocel**, moulding-plane; **c. grande**, planer, **c. chico**, shaper; **c. de ranurar**, rabbit-plane, *see* **garlopa**, **guillame**; (2) mech. prep. a brush, *e.g.*, a horse-brush used for washing tables and screens, *see* **escobilla** (1).

**CEPO**, (1) Mex. a cylindrical post fixed into the bottom of an **arrastre** (3), and upon which the vertical post or **peón** (3) revolves (S. Ramirez); (2) a notch in which timber is fixed (Dwight), *see* **huida** (1); (3) the cross-sill of a battery-frame; there are usually two in the native mills of Ant. Col., known as the **c. superior** (upper), and **c. inferior** (lower); (4) **c. de tornillo**, *u.* haul., screw-grip used in tightening the tail-rope (Molina); (5) block of an anvil (**yunque**), *syn.* **macho** (10), **tajo** (7).

**CEQUIA, CEQUIÓN**, obs. *see* **acequia**.

**CERA**, (1) wax; **c. fósil** or **mineral**, mineral wax or ozocerite; (2) tapers and candles of wax; (3) side-walk, *see* **acera** (1).

**CERBATARA**, *see u.* **macana** (2).

**CERCA**, (1) fence, enclosing wall or hedge, *see also* **cierro**, **estacada** (1); (2) Chile, bed-rock, *see* **roca** (6)—it is sometimes spelt **circa**.



**CERCAR**, to fence, enclose, *see* **cerrar** (2), **vallar**.

**CERCHA**, (1) a thin and flexible wooden rule for measuring convex or concave surfaces (Acad.), *see* **gálibo**; (2) name given to the compound sill [**solera** (3)] used in tunnelling by the English method (Molina).

**CERCO**, (1) hoop or ring, *see* **argolla**; (2) **c. de puerta** or **ventana**, frame of a door or window, *see* **marco** (4); (3) Marmato, Cauca, Col. mine timber (**madera**) 10 feet  $\times$  9 inches  $\times$  3 inches (**Gamba**); (4) Peru, a circular floor, closely paved with stones and cement, and bounded by a wall from 3 to 4 feet high, *syn.* **buitrón** (4)—it corresponds to the **patio** (1) of Mexico; (5) Braz. a sort of coffer-dam [**represa** (1)] used in alluvial river workings, *comp.* **tapón** (3), **trincho** (2); (6) *see* **anillo** (6).

**CERICORIAS**, *see* **agulhas**.

**CERNEDOR**, Ant. Col. buddler, *see* **cernidor** (2), **cernir** (1).

**CERNER**, *see* **cernir**.

**CERNIDERO**, Ant. Col. the place where the buddling operation takes place in **minas de saca**, *syn.* **reñidero** (cock-pit).

**CERNIDOR**, Ant. Col. (1) a concave wooden screen for sifting the fine from the coarse gold, *see* **cedazo** (1); (2) mech. prep. a buddle, frame or sleeping-table, usually 1 foot high, 1 foot wide and  $2\frac{1}{2}$  yards long, used for getting rid of the waste and poorer sands. At the Zancudo mine the **cernidores** are 9 feet long, 18 inches wide, and 18 inches high. Below the **cernidor** is a **tablero** (10), *see u.* **cajón** (5), **gandinguero**, *u.* **mesa** (1), **planilla**. (3) A buddler; (4) Mex. moving screen, **trommel** (Dwight), *see u.* **criba** (2).

**CERNIR**, (1) to sift or separate with a sieve, *syn.* **cerner**, *see* **cribar**; (2) Ant. Col. to buddle, *syn.* **reñir**, *see* **cernidor** (2).

**CERRACHO**, Huancavelica, Peru, smalls or **granza** of mercury ores, forming the top charge in the Barba furnace (Umlauff), *see* **aludel**.

**CERRADERO**, (1) staple which receives the bolt (**cerrojo**) of a lock, staple, *syn.* **argolla**, **armella**, **aro** (2), **cerradura** (2), **gozne** (2), **picolete**; (2) any hole made to receive the bolt of a lock.

**CERRADURA**, (1) lock of a door (Fr. **serrure**), *syn.* **cerraja**, **cierre**; **c. de golpe** or **de muelle**, spring-lock; (2) staple (Ponce de León), *see* **cerradero** (1).

**CERRAJA**, lock of a door, *see* **cerradura** (1).

**CERRAMIENTO**, a mine dam (Fr. **serrement**), *syn.* **dique** (2), **encuñado**, **muro** (3), **tapón** (4), *see* **camisa** (4), **presa** (1); **c. de un pozo** (Fr. **plate-cuve**), shaft dam; **c. esférico**, **c. en bóveda**, spherical dam; **c. plano**, flat dam.

**CERRAR**, (1) to lock or fasten with a bolt or latch; **c. un lámpara**, to lock a lamp; (2) to fence or enclose a piece of ground, *see* **cercar**; (3) **cerrarse**, to close up (of a vein), *see* **se cierra**.

**CERRAZÓN**, Ant. Col. a portion of a placer (**placer**) abounding in large stones (Uribe).

**CERREJÓN**, hillock, *see* **cerro** (1).

**CERRIL**, adj. rough, uneven (of a country).

**CERRO**, (1) hill or highland, generally a rocky hill or mountain, all heights superior to **lomas** and **colinas**; Mex. "toda protuberación aislada ó que se levante en los accidentes de los montañas" (Bárcena); *syn.* **montaña** (1), **monte** (1), *see* **cerrejón**, **cuesta** (1), **mambla**, **morro** (1), **muela** (5), **promontorio** (1), **resbalo**, **terromontero**; (2) **mina de c.**, Ant. Col. placer occurring near mountain-tops, or on the high tablelands where water is scarce (Uribe), *see* **hucica**, **placer**; (3) flax or hemp (**cañamo**) which is hackled or cleaned (Velázquez), *comp.* **canal** (10).

**CERROJO**, bolt, bolt or bar of iron for fastening doors, etc., *syn.* **pasador**, **pestillo**, *see* **cerradero** (1), **perno** (2); **c. de sujeción**, hoist. bolt used in a certain type of safety-cage [**jaula** (2)].

**CESTA**, **CESTO**, basket or pannier; **c. de minero**, miner's basket, *see* **canasta**.

**CHABETA**, *see* **chaveta**.

**CHACHAL**, Peru, graphi e, plumbago (Velázquez), *see* **grafito**.

**CHACRA**, (1) *see u. anta*; (2) Peru, a small tract of land owned by Indian miner "where his wife can grow corn and vegetables, a portion of which is bartered for **coca**—with these and a little llama or sheep's-wool his necessities are fully supplied (A. L. Pearse); (3) Peru, Indian village (Tschudi).

**CHACUACO**, Mex. (1) low-blast furnace [**horno** (2) **de manga**] for smelting silver ores (Acad.); (2) *see* **galeme** (1).

**CHACURRUSCAR**, Peru, to mix several kinds of ore (Dwight).

**CHAFARRETA**, Cartagena, Sp. mode of suspending wheelbarrow by strap to shoulders (Moncada).

**CHAFLAN**, bevel or edge, *see u. corte* (1); blade of a pick perpendicular to the line of handle (**arista**).

**CHAGUALA**, Col. gold ear- and nose-rings found in the **guacas**, *syn.* **argolla**.

**CHALANA**, a scow, lighter; square boat; a kind of barge sometimes used for conveying minerals in canals, etc., *see* **barcazo**.

**CHALCO**, Port. chalk, *see* **creta**.

**CHALCHIGÜITE**, *see* **chalchihuitl**.

**CHALCHIHUITL**, Mex. "several minerals were included under this name (by the Aztecs), amongst them a green quartz or prase, some of the deep green varieties of **tecal** or Mexican onyx (so called) and probably turquoise; but the precious **chalchihuitl** has now been proved to be jadeite" (G. F. Kunz)—**chalchigüite** and **chalchuites** appear to be variations in the spelling, *see* **jade**, **quitzalitztl**.

**CHALCHUITES**, Mex. jade (called emeralds by Prescott), *see* **chalchihuitl**, **jade**.

**CHALUPA** (sloop), Mex. (1) hoist. skip, equiv. Fr. **cuffat prismatique**, *comp.* **tonel** (2); **ch. de seguridad**, safety-skip. NOTE.—Cages [**jaula**

(2)] are sometimes incorrectly termed *chalupas*. (2) A canoe for one or two persons only, used in the *chinampas* (or "floating gardens") of Mexico City (Acad.).

**CHAMBA**, Col. pit or trench, *see* *zanja* (1).

**CHAMBRANA**, (1) Ant. Col. fence round boiler-houses, etc. (2) carp. door-case or window-frame, *see* *marco* (4); (3) hoop of wood or iron on upper portions of doors and windows (Guim), *see* *dintel*.

**CHAMBURGO**, Ant. Col. dike of poles, branches and earth, behind which the water extracted from the alluvial excavation is thrown (Uribe), *syn.* *chicadero*, *jamuradero*, *see* *dique* (1), *comp.* *virada de rio*.

**CHAMPA**, Peru, turf, *see* *turba* (1).

**CHAMPÁN**, S. Am. a vessel of from 70 to 80 tons burden used for carrying freight up rivers; it is propelled by long poles on the same principle as a punt, and is covered with a large *toldo*.

**CHAMUSCAR** (to singe or scorch), Peru, a superficial roasting or calcination to facilitate the grinding of ore (Dwight), *see* *calcinación*.

**CHANCA**, Chile and Peru, ore-sorting or spalling, *comp.* *machaqueo*, *máquina de ch.*, ore-crushing machine; *operario de ch.* spaller, *see* *machador*.

**CHANCACA**, Sayapullo, Cajabamba, Peru, oxidised ore or limonite (Santolalla), *see* *colorados* (1).

**CHANCADOR**, Chile and Peru, spaller, *see* *machador*, *comp.* *pallador*.

**CHANCADORA**, rock-breaker, *see* *quebrantador*.

**CHANCADOS**, Peru, ores spalled to a uniform size (O. F. Pfordte).

**CHANCADURA**, Chile, crushing with a rock-breaker.

**CHANCAL**, the moraine of a glacier (Velázquez).

**CHANCAR**, Chile, Peru, to cob ores, *see* *chanquear*, *comp.* *machacar*.

**CHANGOTE**, an oblong bar of iron; met. bloom, *see* *barra* (3).

**CHANQUEAR**, to break the ore (Ponce de León), *see* *chancar*.

**CHANTO**, prov. Gal. quarr. slate-rock in large sheets, *see* *pizarra*.

**CHAPA**, (1) thin metal plate, *see* *lámina* (1); (2) mech. prep. bucking-plate, *see* *plancha* (3); (3) mech. prep. die, *see* *dado* (1); (4) mech. prep. battery-lining, *see* *forro* (1); (5) Mex. foliated structure (Dwight).

**CHAPA**, Port. plate; *c. de junção*, Minas Geraes, Braz. fish-plate (J. L. Tonkin), *see also* *tala*.

**CHAPADA**, Port. level ground, a plain; *chapadas*, Braz. elevated plains or small plateaux, usually consisting of horizontal deposits, and separated by deep valleys of erosion (C. F. Hertt), *see* *llano*.

**CHAPADÃO**, Braz. a *chapada* of great extent.

**CHAPALETA**, **CHAPELETA**, pump. clapper, clack, clack-valve, *see* *aventador*, *u.* *válvula* (sometimes spelt *clapete*, from French *clapet*).

**CHAPAPOTE**, Cuba, Santo Domingo and Actopan, Vera Cruz, Mex. asphaltum (*betún asfalto*—Ramirez) or mineral pitch. According to Humboldt the mineral tar of Trinidad is also called *chapapote*, *see* *betún*.



- CHAPARRA**, (1) *see* chaparro ; (2) Am. bramble-bush.
- CHAPARRAL**, (1) plantation of evergreen oaks ; (2) Am. thick bramble-bushes entangled with thorny shrubs in clumps (Velázquez).
- CHAPARRO**, evergreen oak-tree, *syn.* chaparra, *see* encina.
- CHAPETÓN**, *see* gachupín.
- CHAPOLA** (butterfly), Ant. Col. name sometimes given to the round-buddle, *see* gandinguéra (1).
- CHAQUETA** (jacket), ch. de agua, met. water-jacket, *see* camisa (1) ; ch. de caldera (2), boiler-casing ; ch. de cilindro, cylinder-jacket ; ch. de vapor, steam-jacket.
- CHAQUIRES**, *see* hapires (2).
- CHARCO**, (1) pool of standing water ; small lake, *see* balsa (1), *comp.* alberca (1), chiflón (1), chilanco, ciénaga (2), encharcada, jagüey (1), raudal, remanso, remolino ; (2) ch. de cuajar sal, Campeche and Yucatan, Mex. ground which is evaporated by the heat of the sun, *comp.* pila (3) ; (3) Ant. Col. the deepest and quietest part of a river, *comp.* cilanco, gorfe, remanso ; (4) *see* cueva (4) ; (5) a basket, *see* canasta.
- CHARCÓN**, Ant. Col. a big pond or tank of water, *comp.* albercón.
- CHARNELA**, (1) hinge ; hinge-joint, knuckle, *see* bisagra (2) ; (2) bloque de ch. mech. guide (Fr. coulisseau).
- CHARQUEADOR**, (1) cart-filler ; (2) Mex. blast. the striker in two-handled drilling ; (3) the helper who, under the old system, sorted the material from ground worked down by the miner (Dwight).
- CHARQUEAR**, *see u.* charqueo.
- CHARQUEO**, (1) filling baskets [charcos (5)] by hand, *see* canasta ; (2) ch. interior, the cleaning out of the small reservoirs [piletas (1)] or pools of water in order to direct them by channels to the shaft (Gamboa, 1761).
- CHARQUERO**, channel which connects water from the distant part of a mine to the sump [caja (3)] (Ansa's MS. 1793), *see* cuneta (2).
- CHARQUIERA**, Chile, metallics contained in the ores (G. V. Hopkins), *comp.* jagua (3).
- CHARQUILLO**, small pool or puddle, *see* charco (1).
- CHATO**, TA, adj. flat ; for válvula chata, *see u.* válvula.
- CHATÓN**, kind of coarse diamond (Velázquez), *see* diamante.
- CHAVERA**, *see u.* laja.
- CHAVETA**, collar or key (Fr. clavette) ; key-bolt or cotter-bolt, *see u.* pasador ; gib, *see* perro (2). NOTE.—Often spelt chabeta.
- CHICADERO**, *see* chamburgo.
- CHICAR**, Ant. Col. to bail water out of pits, in minas de saca and vein mines, by means of large bateas or other vessels (Uribe), *see* achicar, jamurar.
- CHICARRA**, ratchet-drill (Venator), *see* berbiquí.

- CHICHARRÓN**, Ant. Col. a nugget of gold (aug. of *chícharo*, a pea), *see* *pepita*.
- CHICHICLE**, **CHICHITLE**, Mex. a miner's term for rock crystal or amethyst (Bárcena). In Guanajuato such crystals are localised in natural geodes (Ramirez), *see* *cuarzo*.
- CHICUITE**, *see* *chiquichuite*.
- CHIFLADERO**, Mex. ore-hopper (Dwight), *see* *tolva* (1).
- CHIFLARSE**, Mex. blast. to waste itself (as the force of an explosion) through a fissure in a rock (Dwight), *comp.* *bocazo*.
- CHIFLE**, (1) whistle, *see* *silbato*; (2) tide, *see* *u. agua* (5).
- CHIFLÓN**, (1) channel through which water discharges itself with force (Acad.); Ant. Col. a bubbling spring [*hervidero* (1)] or pool [*charco* (1)] into which the waters of a current fall with noise (Uribe), *comp.* *balsa* (3), *charco* (1); (2) a current of air passed through a narrow place; a strong draught of air; (3) a wooden flume, *see* *caz*; (4) Span. Am. an inclined gallery (Mex. *empatillado*); c.m. dook or dip drift; m.m. inclined winze; Chile, an inclined shaft or pit sunk obliquely at angles seldom more than 60° or less than 40°, and averaging about 50° from the horizon (Henwood), *comp.* *barreta* (4); *trabajar á ch.*, to open up, making way in length and depth; to drive an inclined gallery or shaft; (5) Mex. cave of loose stones in the interior of mines (Acad.), *see* *derrumbe* (1).
- CHIGRE**, (1) winch, *see* *torno* (2); steam-winch.
- CHILANCO**, *see* *cilanco*.
- CHILE**, (1) Mex. refractory clay, *see* *arcilla*; (2) Peru, greatest depth of a mine (Dwight), *comp.* *fondo* (3), *profundidad*; (3) Peru, descending gallery following the dip of the vein, *see* *galería*, *comp.* *chimenea* (5).
- CHILENO**, *molino ch.*, edge-mill, *syn.* Mex. *rastrón*, *see* *u. solera* (1), *volandera* (1).
- CHILLA**, (1) *clavo de ch.*, tack, a small nail with a broad head, *see* *tachuela*; (2) *tablas de ch.*, thin boards of split deal, battens, *see* *u. tabla* (1).
- CHILLADO**, prov. roof of shingles or *chillas* (2).
- CHILLÓN**, nail, tack [*chilla* (1)]; *ch. real*, spike used to fasten large timbers or planks (Velázquez).
- CHILUCA**, Mex. a hornblendic variety of trachyte (*traquita*) used for building purposes (Bárcena); a trachy-andesite (Bol. del I. G. de M.).
- CHIMALTIZATL**, Mex. an Aztec name for a kind of talc (*talco*), which, on calcining, yields a fine plaster, used by the Mexicans to whiten their paintings (Clavijero).
- CHIMBO**, Honduras, smelting furnace (W. A. Thacher), *see* *horno* (2).
- CHIMENEA**, (1) chimney, *see* *campana* (12), *cañon* (3), *cintura*; 'chimney or stack of a smelting-furnace, etc., *see* *pívote* (1), *ch. de ventilación*, ventilating stack, *see* *trompa* (3); (2) hearth, fireplace, *see* *hogar* (1); (3) a winze, *see* *clavada*; (4) S. Sp. vent. a kind of brattice [*tabique*

(3)]: (a) *ch. gemela*, battens (*listones de madera*) (*a b*, Fig. 23) are placed across the shaft 1 metre apart; the brattice, made of reeds (*cañas*) tied together with pack-thread (*hilo bramante*), forming what is called a *zarzo* (3), is nailed or tied to the battens, and covered with 1 to 2 c.m. of kneaded gypsum (*yeso amasado*); sometimes a little dry earth or *roya* is added (Molina); (b) *ch. de rincón* (see Fig. 23 c); (c) *ch. de tragante*, ventilating chimney excavated in the "country" (see Fig. 23 d); (5) *Algamarca*, Cajabamba, Peru, ascending gallery, following the dip of the vein, see *galería, comp. chile* (3); (6) narrow excavation opened in the roof of a mine-working or a hole in same resulting from a fall of ground (Acad.), see *derrumbe* (1).

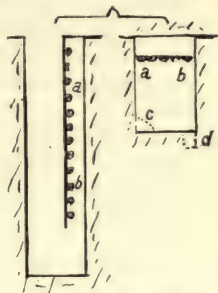


FIG. 23.—Chimenea (4)  
(after Molina).

*a b*, chimenea gemela;  
*c*, chimenea de rincón;  
*d*, chimenea de tragante.

**CHINA**, (1) generic name for any small stone or fragment of stone, pebble, see *guijarro* (1); (2) *Almaden*, Sp. poor quicksilver ore, *comp.*

*metal* (4), *requiebro* (2), *vacisco*; (3) porcelain, china, see *porcelana* (1).

**CHINANTA**, Phil. a weight = 6.326 k., or one-tenth of a *pico* (7).

**CHINARRO**, a large pebble, boulder-stone, see *guijarro* (1).

**CHINATEADO**, *Almaden*, Sp. met. layer of small stones over the large ore in the distilling furnaces (quicksilver) (Acad.).

**CHINAZO**, a large pebble, see *guijarro* (1).

**CHINGANA**, Peru and Bol. a tunnel, underground gallery (*Velázquez*), see *galería* (also = U.S.A. "dive").

**CHINI-LIGA**, Potosí, Bol. a finer variety of galena (*galena*) than *carne de vaca* (1), and always richer in silver (M. Roberts).

**CHINILLA**, a small pebble, see *guijarro* (1).

**CHINO, NA**, adj. for *pasta china*, see *u. pasta* (5).

**CHINO**, (1) iron pyrites; (2) copper pyrites, see *pirita*.

**CHIUICHUITE**, Mex. basket (*canasta*) without a handle used for carrying rubbish, etc., out of mines, and made of *guilocote* (sometimes spelt *chicuite*).

**CHIUERO** (pig-sty), name given to cribbing, or chocks (U.S.A. pen, Australia, pig-sty) used in timbering wide seams or lodes.

**CHISPA**, (1) spark; *ch. eléctrica*, electric spark; (2) very small diamond (*diamante*); (3) nugget of gold, see *pepita*; (4) *piedra de ch.*, flint used with steel [*eslabón* (2)] for striking fire, see *pedernal* (2); (5) *chispa-chispeada*, Batopilas, Chih. Mex. native silver in small thin leaves, but visible to the eye; ore containing one-third native silver, *syn.* *chispeada*, *chispeado*, *comp.* *broza* (2).

**CHISPEADA, CHISPEADO**, see *chispa* (5).

**CHISPERO**, spark-arrester; *ch. de alambre*, wire cap of a chimney (*Ponce de León*).



- CHISPIADOR**, Peru, gold-washer in river-placers (Dwight), *see* **lavador** (1).
- CHIVA** (kid), Mex. bar with claw for drawing spikes (Dwight), *see* **u. barra** (1).
- CHOCAR** (to knock or jostle), Ant. Col. alluv. m. to break up (**batir**) the pay-dirt with water, using bars and other tools, in order to conduct the loosened material to the ground-sluice [**canalón** (2)] (Uribe), *see* **placer**.
- CHOCLO DE ORO**, Peru, a mass of native gold (say 1 oz. or more) in its matrix (Dwight), *see* **pepita**.
- CHOCOLÓN**, Mex. (1) the part of the hole [**barreno** (1)] remaining in the rock after a blast (Dwight); (2) timb. hitch in a rock (Dwight), *see* **huida**.
- CHOLLA**, Mex. opening or hollow space. A small space filled with soft ore (Dwight), *see* **drusa**.
- CHOLO, LA**, adj. civilised (of Indians).
- CHOLO**, Peru and Bol. half-breed of European and Indian parentage; Cholo **barretero**, Indian miner, *see* **minero** (2).
- CHOQUE DE ARIETE**, pump. water-hammer, water-ram, or (U.S.A.) knock, *syn.* **golpe de ariete**, equiv. Fr. **coup de blier**.
- CHORCA**, prov. pit or hole dug in the ground (Velzquez), *see* **hoyo** (1).
- CHORLO**, schorl or common black tourmaline (**turmalina**); c. negro, L. Cal. Mex. tourmaline crystals (Lucas).
- CHORREADERO**, Mex. (1) shoot for ore, *see* **paso** (2); (2) loose or running ground (Dwight), *comp.* **chorrera** (3).
- CHORREAR**, Mex. in the patio process, after the **rendida**, the **liz** or **ceja** (1) is said to drop (**chorrear**).
- CHORRERA**, Mex. (1) **chorreras**, old or abandoned stopes, *comp.* **sacados**, **saln** (2); (2) shoot of ore, *see* **clavo** (2); (3) a run of loose rock (Dwight), *comp.* **chorreadero** (2); (4) rapids of a river, *see* **raudal**.
- CHORRO**, (1) jet of water, *see* **hilo** (5); **ch. de vapor**, steam-jet; (2) spring of water found in mines (Dwight), *see* **manantial**; (3) **chorros**, Atacama Prov. Chile, dikes of diabase traversing the calcareous marl country, or sheets injected between the beds of same, the silver veins are enriched in a vertical sense by the **chorros** (E. B. Dorsey), *see* **dique** (5), *comp. u.* **manto** (1); the name is also given by the miners to any sterile fault.
- CHORRN**, hackled or dressed hemp (**caamo**).
- CHORTAL**, fountain or spring at the surface, *see* **manantial**.
- CHOZA**, Mex. hut, *see* **jacal** (1).
- CHUA**, Chile, small round dish or saucer of black unglazed earthenware,  $4\frac{1}{2}$  inches in diameter and  $\frac{1}{2}$  inch deep, *syn.* **achua**, *comp.* **batea**.
- CHUCA**, Chile, a friable layer of sand and gypsum overlaying **costra** and **caliche** (1); also described as dull brown and powdery soil frequently strewn with angular fragments of reddish black porphyry rock, and

sometimes broken by small pit-like depressions lined with saline incrustations.

**CHUCHERO**, S. Am. rail. pointsman (Ponce de León), *see* **cambiador de aguja**.

**CHUCHO**, (1) Cuba, rail. switch, *see* **cambio** (1); (2) siding, *see* **desvío** (2).

**CHUGA**, *see* **puruña** (2).

**CHULANO**, **barreno á ch.**, upward drill-hole [**barreno** (1)].

**CHULLADOR**, Peru and Chile, a wrought-iron settler, formerly used in evaporating caliche (1), *see* **cachuco**, **estanque** (3).

**CHUMACERA**, an iron socket for spindles of shafts, bearing, journal bearing, *syn.* **cajera**, *see* **cojinete** (1), **pedestal**, **soporte** (1), *comp.* **candelero** (2), **quicio** (4), **tejuelo** (1).

**CHUMBE**, (1) Potosí, Bol. zinc-blende, *syn.* Peru, **chumpe**, *see* **blenda**; (2) Ant. Col. strap of coloured wool for carrying the **carriel**.

**CHUMBO**, Port. (1) lead, *see* **plomo** (1); (2) plummet, *see* **plomada**; (3) *see u.* **agulhas**; (4) Ouro Preto, Braz. pyrites (J. L. Tonkin), *see* **pirita**.

**CHUPADOR**, *see* **alcachofa**.

**CHUPADOR, RA**, adj., **bomba chupadora**, suction-pump, *see u.* **bomba** (1).

**CHUPÓN**, (1) pump. plunger, pole or ram (Ponce de León), *see u.* **émbolo** (1); (2) c. de **bomba**, pump. valve-bucket (Ponce de León); (3) opening at surface due to caving-in of ground in mine workings (Molina), *see* **buzón** (6), **embudo** (3), **revenimiento**.

**CHURRO**, *see* **candil**.

**CHURUMBELA**, Ant. Col. micaceous and talcose schist, yellow and reddish, resulting from the decomposition of felsite; this kind of country sometimes forms the walls of veins, when it is an unfavourable sign (Uribe); according to Angel "esquisto talcoso llamado **pedra de c.**, reconocido come el mejor respaldo de las minas de oro." In Amalfi it is a complex hornblendic material forming here and there the false wall of the gold-bearing vein (Gamba), *see* **esquisto**, **peña** (5).

**CHUZA**, Mex. mech. prep. a washer or settler [*see u.* **estanque** (3)]; catch-basin for mercury (Dwight); in the **patio** process, circular washer, settler or settling-tank for the **raspa** (2), 3 m. in diameter and 0.5 m. deep, *see* **reposadero** (4), *comp.* **lavadero** (3), **tina** (2).

**CHUZO** (pike), (1) blast. a stick with an iron point, *see u.* **barra** (6); (2) Cauca, Col. long, wooden, iron-tipped sounding-rod for locating shafts in alluvial mines (low flats with bed-rock near or below the level of the stream); (3) **pala de ch.**, round-pointed shovel, *see* **pala**; (4) Chile, pointed tool used in washing gold in sluices, in extracting borax (ulexite) in large pieces, etc., *syn.* **picota** (2).

**CIANURO**, cyanide, *see u.* **beneficio** (3).

**CIBRÚ**, *see* **cedro**.

**CIEGO, GA**, adj. *piedra ciega*, *see u. piedra*.

**CIELO**, (1) roof, ceiling of a room, etc., *see cimborio*, *cúpola*; (2) roof of an adit, or of any mine-working, *see techo* (2); (3) *á c. abierto*, quarrying, *syn. á roza abierta*, *encantera*, equiv. Fr. *abattage à ciel ouvert*, Ger. *Steinbruchbau*, *Pingenbau*, *see corta* (2), *tajo* (2) *abierto*; (4) *trabajar de c.*, to stope overhand, *syn. Mex. rebajar del c.*, *trabajar de cabeza* (6); *trabajo de c.*, overhand or overhead stoping, *syn. Mex. rebaje del c.*, *see u. testero* (3); (5) *trabajo á c.*, rising, *syn. labor á c.*, *see contracielo*; (6) *labrado de c.*, *see comido*.

**CIÉNEGA**, (1) marsh, moor, *comp. cieno*, *estero* (1); (2) S. Am. lake or lagoon, *see laguna* (1), *pantano* (1), *comp. balsa* (1), *charco* (1).

**CIENMILÉSIMO**, *see u. diezmilésimo*.

**CIENO**, mud, mire, marshy ground, *comp. ciénaga* (1).

**CIERRE**, (1) hoist. locking of doors of cages; light. locking of safety-lamps; (2) lock, *c. de seguridad*, hoist. lock for closing door of cages, *see Fig. 24* (after Molina); *c. á tornillo*, light. screw-lock of safety-lamp; *c. con marchamos*, lock with marks for ditto (Molina); (3) *válvula de c.*, stop-valve, *see u. válvula*.

**CIERRO**, enclosure, *see cerca* (1).

**CIGOÑAL**, machine with which water is drawn from wells by a crank; windlass, *syn. cigüenal* (1), *see torno* (2).

**CIGÜAIRO**, Peru, peacock-coloured, *syn. civairo* (Dwight).

**CIGÜEÑA**, (1) handle of a windlass [*torno* (2)], *syn. manigueta*, *manivela* (1), *manubrio* (2); *c. de piedra de amolar*, iron winch of a grindstone; (2) windlass, *see torno* (2); (3) bell-crank, crank, *see manubrio* (3); *cigüeñas de las válvulas de vapor*, crank arrangement of the valves of a Corliss engine (cut-off), equiv. Fr. *secteurs*.

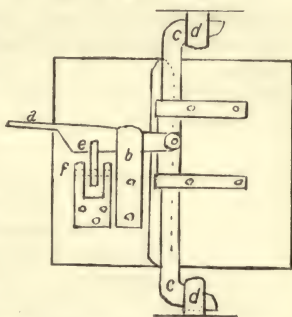


FIG. 24.—Cierre (2) de seguridad (after Molina).

*a*, Picaporte; *b*, nariz; *c*, fallaba; *d*, pitones; *e*, anillo; *f*, eje.

**CIGÜEÑAL**, (1) *see cigoñal*; (2) crank, *see manubrio* (3); *c. de campana*, bell-crank; *c. de bomba*, brake or sweep of a pump (Ponce de León).

**CIGÜEÑUELA**, dim. of *cigüeña*.

**CILANCO**, a deep pool in bends, or slack water, of rivers (Velázquez), *syn. chilanco*, *comp. charco* (3).

**CILINDRO**, (1) cylinder or roller; *c. estriado*, fluted cylinder; (2) barrel of a windlass, *see árbol* (2); (3) mech. cylinder of a steam-engine, etc., *see culata* (1); (4) *cilindros*, *cilindros trituradores*, mech. prep. Cornish crusher, (U.S.A.) rolls; *cilindros de fino*, rolls for fine crushing; *cilindros de grueso* or *cilindros granceadores*, rolls for coarse crushing, *see u. resorte*.



**CIMA**, summit (of a hill or mountain), *syn.* *cabecera* (3), *cabeza* (13), *cabezo*, *ceja* (3), *cresta* (1), *cumbre*, *punta* (8), *equiv.* *Port. coroa*, *see cuerda* (8), *cúspide*.

**CIMBORIA**, **CIMBORRIO**, cupola, dome, roof, *see* *cielo* (1).

**CIMBRA**, (1) wooden frame or scaffolding on which an arch (*arco*) is constructed known as the centre or centering, *see* *camón* (1), *galápago* (4); (2) Ant. Col. primitive stamps worked by manual labour. At either end of a wooden axle-tree, and perpendicular to it, is a circular wheel or wooden frame, 8½ feet in diameter, provided with round pieces of wood 12 inches from centre to centre. A man stands at each wheel and works it by hauling on to the rungs. Three heads are used.

**CIMBRIA**, *see u.* *punte* (1).

**CIMENTACIÓN**, foundation, *see* *cimiento* (1).

**CIMENTO**, cement, *see* *cemento* (1).

**CIMIENTO**, (1) ground-work or foundation of a building, *syn.* *cimentación*, *see* *fundación*; *c. de hormigón*, concrete foundation; (2) cement, *see* *cemento* (1); *c. real*, royal cement, a composition of salt, vinegar and brick-dust, for purifying gold (Neuman and Baretti), *see u. granalla*; (3) *mas. puddle*, puddling (Ponce de León), *see u. amasijo*.

**CINABRIO**, cinnabar, *syn.* *llimpi* (of Mexican Indians), *mercur blenda*, *see* *acerado* (2), *bermellón*, *granate* (2), *u. mancha*, *mercurio* (2), *negro* (2).

**CINC** (zinc, *zínque*), (1) zinc (metal); (2) calamine or smithsonite.

**CINCEL**, (1) chisel, *syn.* *carp. escoplo*, *formón*, *see* *boquilla* (2), *cortadera* (1), *cortafrió*, *escopa*, *gradino*, *gubia*, *puntero*, *rompedera*, *trinch* (1), *uña*; (2) *c. del Indio*, Col. a very hard and resisting stone fashioned like a common chisel, by which the indigenous Indians worked their mines, and cut various substances (Uribe), sometimes found in *guacas* (1), *syn.* *bruñidor* (burnisher), *see* *Angel*, Pl. IX. Fig. 3; (3) Peru, native silver in large masses (Dwight), *see* *pepita*.

**CINCELAR**, to chisel.

**CINCHA**, girth, cinch, *see u.* *cabuya* (2).

**CINCHO**, (1) belt or girdle used by labourers; (2) tire of a wheel, *see* *llanta* (1); (3) Zac. Mex. timb. horizontal timber used for wedging stemple (*estemple*) against plank on hanging-wall, *see* Fig. 25, *see* *oreja* (2); (4) *cinchos*, Mex. shaft-frames or cribs which are separated from each other as in open crib-timbering, *see* *cuadro* (1), *comp. anillo* (2).

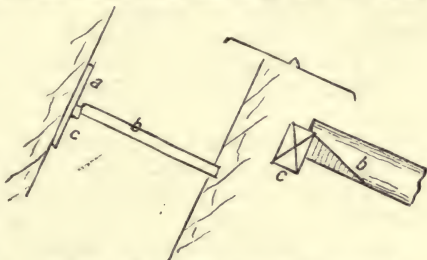


FIG. 25.—Cincho (3) (after Luis Carrión).

*a*, Galápago (2) or plank serving as head-piece  
*b*, riostra or estemple (stull); *c*, cincho (3), used for  
wedging *b* against *a* (*ajuste de oreja*).

**CINCORÁS** (Sincorás), Braz. diamonds from the Serra de Cincorá, to distinguish them from the Diamantina stones (Bauer).

**CINCHÓN**, *see u. cabuya* (2).

**CINTA** (ribbon, tape), (1) surv. measuring-tape, tape-line, tape-measure, *syn. cuerda* (2) *métrica*, Col. *guasca* (2), *lienza* (2), *see metro* (2); (2) Mex. a layer or band of mineral in a vein, pay-streak, *syn. banda* (2), Mex. *cordón* (2), *faja* (1), *guía* (17) *de filón*, *hilera* (4) *costeable*, *ramaleo*, *veta* (3), *zona* (1), *see cinteado*, *da*; (3) Col. the auriferous layer in gravel deposits, the pay-dirt or pay-gravel, *see cintarrón*, *cueva* (3), *greda* (4), *u. hervida*, *sepé*, *tosca* (3), *vena* (7), *venerillo*, *venero* (6); (4) Col. small poling used in sloping roof, and tied by *guasca* (1); (5) *frena de c.*, hoist. band-brake, *see u. freno* (1); (6) *trépano de c.*, bor. worm auger, *see u. trépano*.

**CINTARRÓN**, Col. a layer of pay-dirt of unusual thickness, *see cinta* (3).

**CINTEADO, DA**, adj. *estructura cinteada*, Mex. banded or ribboned structure of veins, *syn. Sp. estructura bandeada* or *fajeada*, *see cinta* (2).

**CINTERO**, hoist. rope made of hemp or esparto, *see cable* (1).

**CINTURA** (waist), narrow part of a chimney [*chimenea* (1)] between the *campana* (12) and the flue or stack [*cañon* (3)].

**CIPÓS**, Braz. *see u. taquara*.

**CIRCA**, (1) *see cerco* (2); (2) Peru, breaking down the "country" at the side of a vein, and leaving the ore for subsequent extraction, *see desanchar* (1), *comp. llauca*.

**CIRCAR**, Peru, to break down the "country" or wall of a lode, *see circa* (2).

**CIRCO**, *see cerco* (4).

**CIRCÓN**, zircon, *see jacinto* (1).

**CIRCULAR**, *see u. transporte*.

**CÍRCULO**, (1) circle; *c. de la brújula* (2), compass circle or card [*naut. rosa* (2)]; (2) district, *see distrito* (1).

**CISALLAMIENTO**, *see desgarre*.

**CISCO**, (1) coal broken into small bits, broken coal; (2) coal-dust, *syn. polvo de carbón* (2), *see carboncillo* (1).

**CISTERNA**, (1) cistern, *see estanque* (3); (2) reservoir, *see estanque* (1).

**CITACIÓN**, summons, judicial notice.

**CITAR**, to cite, to summon before a judge; to give judicial notice.

**CITARA**, wall of the thickness of an ordinary brick, *see muro* (1).

**CIUDAD**, (1) city, town; (2) corporation, civic body.

**CIVA**, Mex. stump of candle (Dwight), *see cabo* (4).

**CIVAIRO**, *see cigüairo*.

**CLAMA**, large clamp iron (Ponce de León), *see egrena*.

**CLAPETE**, *see chapaleta*.

**CLARO**, (1) an open space in the lode from which ore has been taken out (M. J. Gloss. and Elwes), *comp. salón* (2); (2) *c. de una criba*, *de las mallas*, mech. prep. size of mesh, or "mesh"; (3) hoist.

space left in a ring, hook or link, split in a ring, etc. ; (4) space between standards of a ropeway, etc.

**CLASIFICACIÓN**, mech. prep. classifying.

**CLASIFICADOR**, mech. prep. classifier.

**CLASIFICAR**, mech. prep. to classify.

**CLAVADA**, m.m. winze, c.m. staple, *syn.* Ant. Col. **apique** (2), Espiel, Cordoba, Sp. **balanza** (2), **buzón** (5), **caldera** (4), Linares, Sp. **calderilla**, **chimenea** (3) (if used for ventilation), **coladero** (1) (if used as a shoot), **pocillo** (2) interior, Cartagena, Sp. **pozaco**, Mex. **pozo** (3), **pozo de comunicación**, **pozo interno** or interior, Almaden, Sp. **profundidad** (2), Mex. **rebaje** (3) [*see* **rebajo** (3)], Asturias, Sp. **servicio**, Las Alpujarras and Sierra Almagrera, Sp.  **tiro** (2), equiv. Fr. **puits intérieur**, Ger. **blinde Schacht**, *comp.* **chiflón** (4), **contracielo** (1).

**CLAVADO, DA**, adj. **veta clavada**, Ant. Col. a vertical or nearly vertical vein, *comp. u.* **échado, da**.

**CLAVAR**, to nail, *see* **enclavar** ; to drive a stake.

**CLAVAZÓN**, (1) set of nails ; (2) c. de **ferrocarril**, railway spikes (Ponce de León), *see* **perno** (1).

**CLAVE**, keystone of an arch (**arco**), *syn.* **llave** (9), *see* **contraclave**.

**CLAVEQUE**, rock-crystal in the form of pebbles, *see u.* **cristal** (1).

**CLAVETE**, tack, small nail, *see* **clavillo**, **tachuela**.

**CLAVIJA**, (1) pin or peg ; c. de **cigüeña**, crank-pin, *see* **pasador**, **perno** (3) ; cotter or key, *see u.* **cuña** (1) ; c. y **contraclavija**, cotter and gib, *see* **perro** (2) ; (2) **rueda de clavijas**, mech. sprocket-wheel or rag-wheel ; (3) **quarr. lewis**, *syn.* **castañuela de cantera**.

**CLAVILLO, CLAVITO**, dim. of **clavo**.

**CLAVO**, (1) nail or spike ; c. de **ala de mosca**, nail with a flattened head like a tack [c. de **chilla**, *see* **chilla** (1)], *see* **espiga**, **hita**, **hitón**, **perno** (1), **prego trabal**, **puntilla**, **tachuela** ; (2) Span. Am. a rich pay-chimney, column or shoot, *i.e.*, an ore-body having more or less continuity in a vertical sense, but with horizontal limits, *syn.* **cámara** (2) (but includes chamber deposit), Mex. **chorrera** (2), **clavo de metal**, **clavo rico**, **columna** (4) **rica**, Ramos, Zac. Mex. **cocinera**, **macizo** (4) **mineralizado**, **tramo rico** (but includes *course* of ore), equiv. Fr. **colonne métallifère**, **colonne riche**, Ger. **Erzfall**, **Erzsäule**, *comp.* **árbol** (5), **boleo** (2), **bolsa** (1), **bóveda** (2), **criadero** (2), **cuerpo** (6), **moscas**, **ojo** (1), **rameos**, **remolino**, **salón** (1). NOTE.—The term **clavo** is often applied to any bunch of ore, or even to the pay-streak [**cinta** (2)] of a vein. (3) Ant. Col. a piece of gold which crosses a stone from one side to the other (Uribe) ; for **plata de clavos**, *see u.* **plata** (2) ; (4) the vertical bar of a **perro de mina** (Ger. **Hund**), equiv. Fr. **clou** (Molina) ; (5) point of a rake or other tool, *see* **punta** (1) ; (6) **clavos**, geol. inclusions of igneous rock in a sedimentary one.

**CLIVAGE, CLIVAJE**, cleavage, *see* **crucero** (4).

CM. = **cienmilésimos**, *see u.* **diezmilésimos**.



**COA**, Mex. a kind of hoe [*azadón* (1)], *see u. macana* (1).

**COBALTO**, (1) cobalt; (2) cobalt ore; *c. arsenical*, grey cobalt ore or smaltite; *c. brillante* or *c. gris*, cobaltite; *flores de c.*, cobalt bloom.

**COBIJA**, (1) gutter-tile, *see baldosa* (1); (2) cobijas, Linares, Sp. flags or thin flat stones of sandstone (*lajas de arenisca*), sometimes used to form a kind of bunding, stull or platform [*camada* (3)]; they are usually placed flatly side by side (*de plano*); when one flagstone forms the roof = *de bravo*; if two are placed in the form of a *cuchillo* [*see u. armadura* (2)] = *de apuntado* (Gillman and Molina), *see baldosa* (2), *laja*, *losa*.

**COBRE**, (1) copper; *c. en plancha*, sheet copper; *c. negro*, black or blister copper; *c. roseta*, rose copper; ingot copper, *syn. c. bruto en plancha*; (2) copper ore; *c. abigarrado*, *c. morado*, *c. piritoso hepático*, bornite, erubescite or "horseflesh ore"; *c. amarillo*, *c. piritoso*, chalcopyrite or copper pyrites (*see u. pirita*, *sotlanque*); *c. azul*, azurite or blue copper ore; *c. gris*, *c. gris antimonial*, tetrahedrite, *syn. c. cochizo*, *esmalina* (2), *pasta* (5), *pavonado* (1); *c. gris arsenical*, tennantite; *c. rojo*, red copper ore or cuprite [ $\text{Cu}_2\text{O}$ ]; *c. salino*, *atacamite*, *see atacamita*; *c. sulfurado vidrioso*, *c. sulfúreo*, *c. vidrioso*, chalcocite, redruthite, copper glance or vitreous copper ore; *c. verde*, malachite; *c. vírgen*, native copper; *cobres*, Asientos, Aguascalientes, Mex. copper ores which are smelted and come generally from the so-called *mantos* (3), and composed of oxides, carbonates and silicates of copper, accompanied by oxides of iron, carbonate and silicate of zinc, with a matrix composed of quartz, clay, calcite, fluor spar, and *piedra radiante* (a var. of hornblende) (S. Ramirez); for other ores of copper *see abronzado* (2), *añilado*, *aplomados*, *atabacado*, *azulaque* (3), *barrilla* (3), *cobrizo*, *cochizo*, *cori-bronze*, *coro-coro* (1), *dorados*, *duros* (1), *famatinita*, *güedales*, *lamosos*, *llamperas*, *llampos* (1), *negrillos* (6), *u. pastoso*, *sa*, *pastosos*, *polvorilla* (2), *rameos*, *sotlanque*, *verdiones*, *yesosos*.

**COBRESE AL ENTREGAR** = C.O.D. (collect on delivery) (Ponce de León).

**COBRIZO**, **ZA**, adj. coppery, cupreous, copper-bearing.

**COBRIZO**, Mex. copper ore, inferior to *abronzado* (2) (G. F. Lyon).

**COCCIÓN**, burning of lime; roasting of ores; baking of bricks, etc.

**COCER**, to burn lime; to roast ores; to bake bricks, etc.

**COCHA**, (1) small reservoir of water or cistern, *see estanque* (3); Peru, crude settling-tank, built of stones [*see noque* (1)]; *c. de clarificación*, Mex. settling-tank; (2) Peru, lenticular deposit, *see lenteja*; pocket; (3) Echandía, Cauca, Col. = *carga* (2).

**COCHANO**, Venez. nugget, *see pepita*.

**COCHE** (coach), (1) wagon used in mines, *see carro* (1); (2) rail. car, *see carro* (2); (3) Mex. rock-crusher (Dwight), *see quebrantador*; (4) Mex. large anvil (Dwight), *see yunque* (1); (5) Peru, timb. stull, *syn. tinca* (2), *see estemple*.

- COCHERO** (coachman), Mex. and Col. trammer, *see* **carretero** (1).
- COCHINA** (sow), Mex. (1) rock-crusher, *see* **quebrantador** (1); (2) large anvil (Dwight), *see* **yunque** (1).
- COCHIZO**, Peru and Bol. tetrahedrite or **fahlerz**, one of the most abundant silver-bearing ores, and contains up to  $17\frac{1}{2}$  per cent. of silver; it is generally massive, and in small patches and specks in the pyrites (M. Roberts), *see* **cobre** (2).
- COCIMIENTO**, (1) Peru, obsolete method of extraction by boiling the ores (Dwight), *see* **beneficio** (3); (2) Chile, method of treating nitrates [caliche (1)].
- COCINERA**, Ramos, Zac. Mex. the rich part of a mine, *see* **clavo** (2).
- COCO**, Ant. Col. alluv. m. a vessel made of the fruit of the cocoanut, or of a totuma, which the **zambullidores** carry attached to the waist to deposit auriferous sands therein, taken out of the **zambullida** (V. Restrepo), *see also* **fruta de mono**.
- CODAL**, (1) frame of a hand-saw, *see* **sierra** (2); (2) **codales**, a carpenter's square, *see* **escuadra** (1); (3) timb. stay, strut, *see* **tornapunta**; stay-bolt; (4) brick arch (**arco**), the ends of which bear on mineral, and provisionally made to withstand the pressure of the walls (Acad.).
- CÓDIGO**, code of laws; **c. civil**, civil code; **c. de minas**, mining code, law of mines, *see* **derecho** (1), **fuero** (3), **ordenanzas**, **recopilación**.
- CODO** (elbow), (1) cubit or measure taken from the elbow to the end of the middle finger; **c. geométrico**, 418 mm.; **c. real**, 574 mm.; (2) carpenter's rule, *see* **regla** (1); (3) **c. de hierro**, angle-iron, *see u.* **hierro** (1); (4) **c. de palanca**, crank, *see* **manubrio** (3); (5) pump. abrupt angle or elbow (of tubes, pipes, etc.); **c. de empalme**, *see* Fig. 26.
- COESILLOS**, *see u.* **obsidiana**.
- COGEDOR**, collector; **c. de maestras**, mech. prep. sampler, *syn.* Mex. **mostrador**.
- COGOLLERA**, *see u.* **cogollo**.
- COGOLLO**, **c. de la cinta** (3), **c. del hilo**, Ant. Col. the upper part of the pay-dirt and vein respectively; **cogollos**, superficial part of an ore-deposit; **cogollos de las vetas**, outcrop, *see* **afioramiento**; **mina cogollera**, a mine which has produced good profits on the outcrop or superficial part, and which becomes impoverished on sinking (Uribe), *see* **descogollar**.
- COHETAZO**, Mex. a method of blasting rock by wrapping gunpowder in paper which is bound with palm, or other flexible herb, and compressed with white sifted earth, a portion of the small tube remaining outside, in order to put the wick [**mecha** (1)], and fire it (Gamboa, 1761); a shot with a match or squib, a shot with a cartridge (**cohete**).

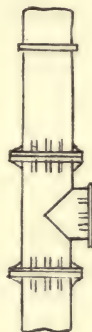


FIG. 26.—Codo (5) de empalme.

**COHETE**, (1) blast. cartridge, *see* *cartucho*; (2) Mex. blast-hole, *see* *barreno* (1); (3) *c. de luz*, torch, *see* *hacha* (2); (4) rocket, *syn.* *voladora* (4); *cohetes para señales*, signal rockets (*Velázquez*).

**COHETERO**, *see u.* *golpeador*.

**COJINETE**, (1) bearing, pillow-block, pedestal, *see* *chumacera*; (2) spindle of a windlass, *see u.* *sombrero* (3); (3) transp. chair of a rail (*Fr. coussinet*), *see u.* *brida* (2); (4) die of screw-stock, *see* *terraja*; (5) in wire ropeways, the carrier or "hanger" which holds the bucket or "skip" (*balde*); *c. de afuera*, out-end carrier (*Fr. palier extérieur*).

**COK, COQUE**, coke, *see* *hulla* (3), *trinch*a (3).

**COLA** (tail), (1) Mex. part of a vein which terminates in depth (*Carrión*); tail-end of a vein; (2) *c. de rata*, rat-tail file, *see* *lima*; (3) *c. de rata*, Mex. timb. one method of joining cap and leg-piece, *see* Fig. 27; (4) mech. prep. stamp stem or lifter, *see* *mango* (2); (5) Ant. Col. lower end of a placer-mine, *comp. cabeza* (9); (6) Ant. Col. lower end of a ground-sluice, very poor in gold, *see* *cabecera* (5); (7) *colas*, mech. prep. tailings, *syn.* *colillas*, Mex. *desecho* (2), *deslave*, *see* *despaje*, *jales*, *rabos*; (8) in the patio process, the poor brown sulphides left above the rich concentrates [*polvillo* (3)] in the bowl concentrator [*boliche* (1)]; (9) the bottom layer of slags below the charge in the smelting furnace [*horno* (2)]; (10) *c. de milano* or *de pato*, carp. dove-tail tenon, *see* *corte* (11), *espiga* (2); (11) *cable de c.*, *u.* haul. tail-rope, *see u.* *cable*; (12) *c. de espeque* (1), free end of the driving-beam of a horse-whim; (13) glue; *c. de pescado*, isinglass, *syn.* *colpez*.

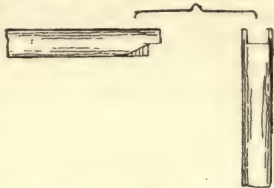


FIG. 27.—Cola (2) de rata.

**COLADA**, met. tapping of a blast-furnace, *see* *depósito* (10), *sangría* (4).

**COLADERA**, Mex. rather coarse screen (*Dwight*), *see* *criba*.

**COLADERO**, (1) winze (used as an ore-shoot), *see* *clavada*; (2) Ant. Col. shoot for ore, ore-shoot or pass, *see* *paso* (2).

**COLADOR**, *c. de bomba*, pump-sieve, pump-strainer (*Ponce de León*).

**COLADO**, *hierro c.*, cast iron as distinguished from wrought iron (*hierro dulce*), *see also u.* *acero*.

**COLAR**, Mex. (1) to drive, *see* *avanzar*; (2) to sink, *see* *ahondar*; (3) to pump, *see* *desagüar* (1).

**COLCHÓN DE AIRE**, air-mattress of a Fleuss apparatus, *see* *aerofora*.

**COLECTOR**, *see* *fango* (3).

**COLERO**, (1) Mex. assistant to underground captain (*capitán*) in charge of the *peonada*, or account of daily labour (*Lyon*); boss over peons, *see u.* *minero* (3); (2) Ant. Col. bottom-sawyer, *see u.* *aserrador*.

**COLGADO, DA**, adj. suspended, *see u.* *colgar* (3) and *mampostería* (2).



**COLGADORES DEL REGULADOR**, st. eng. the short levers attached to the pendulum of the governor, *see* Fig. 28 c.

**COLGANTE**, hanging, *see u.* andamio, bomba (1), and puente (1); **colgantes**, Mex. timb. hanging-bolts or hangers for suspending sets in shafts.

**COLGAR**, Ant. Col. (1) alluv. m. to utilise the available drainage (meter tonga) of a labor baja or aventadero (1) in order to win it (Uribe); (2) c. el canalón (2), to put a ground-sluice in running order by taking out the small stones [cascajear (2)], and making the sands (arenas) run (Uribe); (3) c. el mineral, to open out a vein by driving levels upon it; metal colgado, Chile, ore in sight (á la vista), ore-reserves; (4) c. el molino, to start a mill running, *comp.* parar.

**COLILLAS**, tailings, *see* cola (7).

**COLINA**, top, hillock, hummock; a small hill with an altitude of from 150 to 250 m. (Bárcena), *see* terromontero, *comp.* cerro (1), collado, loma (1).

**COLINDANTE**, adj. mina c., adjacent mine, or mine bounding another mine, *see* confín, confinante, adj.

**COLLADO**, hill, fell, a small eminence (Velázquez), *comp.* colina.

**COLLAR**, mech. collar; c. de suspensión, oval collar or ring for suspending bore-tubes; c. de retención, collar for retaining same; *see* argolla, collarín, cubrejunta, garganta (2).

**COLLARÍN**, mech. hoop, collar, ring, gland, *see* collar; c. del eje, axle-collar; c. del vástago del émbolo, st. eng. piston-gland; c. de la caja de estopas, stuffing-box cover (Ponce de León).

**COLMAR**, to overfill (a wheelbarrow, etc.); **colmarse**, to fill up (of a river, canal, etc.).

**COLOCAR** (to arrange, place), c. una máquina, to set an engine; c. viguetas, carp. to joist (Ponce de León).

**COLMILLOS** (eye-teeth), Ant. Col. protuberant pieces of rock, the result of denudation by water-currents.

**COLOCACIÓN**, timb. fixing of timbers, frames, etc., in place.

**COLOR**, (1) "colour" (U.S.A. and Australia "color") of gold; colorcito, slight colour (color), *see u.* pinta (5); (2) earth, rock or gangue stained with mineral.

**COLORADA**, Pataz, Peru, boulder-clay and glacial conglomerate (Felipe de Lucio).

**COLORADOS**, (1) Mex. red oxidised ores or gossan found at or near the surface. At Pachuca, Hid. Mex. this zone is sometimes covered by black oxidised ore, containing much manganese (quemazón), and is succeeded by the sulphide zone (pinta azul). Silver occurs in this zone as native silver, or as chloride, or chloro-bromide. In gold as well as in some silver mines native go'd is present. At Fresnillo, Zac. Mex. yellowish and very friable ores, containing much hydrated

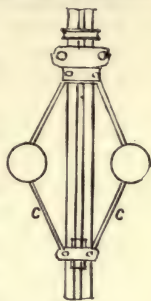


FIG. 28.  
Colgadores del  
regulador.

sesquioxide of iron, metallic sulphides in small quantity, native silver, and bromide of silver (Burkart). *Syn.* Mazapil, Zac. Mex. amarillos, Huelva, Sp. montera (2), Peru, pacos (1), Mex. pardo, sombrero de hierro, equiv. Fr. chapeau en fer, Ger. eiserner Hut, Ital. cappello di ferro, brucione, *see* carmín, cascajo (4), chancaca, espuma (2), ixtajales, pacos (1) and (2), tepostel (1), *comp.* azulaque (4), negros (5) and (6); (2) Peru and Chile, oxidised silver ores coloured by copper or in which malachite or azurite predominates, *see u.* *cálido, da.*

**COLOTE**, Mex. a special basket used for handling earth, etc., by *cargadores*; it is slung on the back, and usually provided with a short tail-rope for quick dumping (Dwight).

**COLPA**, (1) Mex. in the *patio* process, a natural mixture of sulphate and peroxide of iron (colcothar), sometimes used in lieu of *magistral*, and then known as *beneficio de la colpa* (Humboldt). It was introduced by Lorenzo de la Torre. (2) Peru, iron sulphate or copperas, *see* *caparrosa* (1); (3) *colpas*, Chile, ore in lumps; *colpas de lignita*, lumps of lignite (Hoskold); (4) Peru, an ore containing galena, tetrahedrite and native silver (Dwight).

**COLPEZ**, isinglass or fish-glue (Velázquez), *see u.* *cola* (13).

**COLUMN, COLUNA** (column), (1) timb. upright, post or staddle supporting shaft-frames, *syn.* Mex. *hembra* (2), *mono* (1); (2) timb. leg-piece, *see* *peón* (4); (3) mech. prep. Col. uprights of a battery-frame, *see* *montante* (1); (4) Col. leg of a *burro* (4); (5) *c. rica, c. inclinada, c. recta*, ore-shoot, shoot pitching in one direction of the strike, shoot following the dip, respectively, *see* *clavo* (2); (6) *c. ascensional*, pump. column of pumps, pipes or tubes; *c. perdida*, lost column; (7) in winning mineral deposits, pillar which is subsequently removed; *método de columnas*, Sierra de Cartagena, Sp. method of winning the *azules* (6) by means of irregular pillars and stalls [*huecos* (4)], the former being subsequently removed (Molina), *see* *pilar* (1); (8) *máquina de columna de agua*, water-pressure engine, equiv. Fr. *machine à colonne d'eau*, Ger. *Wassersäulen Maschine*; (9) Mex. standard for cable-tramway (Dwight), *see* *caballete* (5); (10) Mex. vertical damper (Dwight), *see* *registro* (3).

**COLUNA**, *see* *columna*.

**COMALILLO**, Mex. (1) double-hearthed reverberatory furnace for making *magistral*; at Guadalcázar, a furnace for calcining mercury ores, having a capacity of 40 *arrobas* in six hours, *see* *horno* (2), *comp.* *comillo*; (2) damper in a furnace-flue (Dwight), *see* *registro* (3).

**COMARCA**, (1) territory, district; *c. minera*, mining district, *see* *real* (1); (2) border, boundary, limit, *see* *lindero*.

**COMAYA**, large basket, pannier, *see* *canasta*.

**COMBA**, (1) curvature or bending of timber; bending of iron bars, rails, etc.; (2) *see* *combo* (1).

**COMBAR**, to bend, to curve; to warp, *see* *comba* (1).

**COMBAZO**, Chile, large maul, *see* *combo* (1).

**COMBO**, Peru, cobbing- or sledge-hammer, maul—that for double-handed boring weighs  $12\frac{1}{2}$  lb. (sometimes spelt *comba*), *see maza* (3).

**COMBONA**, Ant. Col. a joint used in timbering, *see* Fig. 29, *see ajuste* (3).

**COMBUSTIBLE**, fuel, *syn.* *fomento* (1); *c. de madera*, firewood, *see carbón*, *ichu*, *leña*, *queñua*, *taquia*, *u. tarea*, *turba*, *yareta*.

**COMEJÉN**, (1) in tropical America a kind of termite or white ant destructive to all kinds of timber, with few exceptions (*see comino*, *punte*), *see tueca*; (2) sort of wood-borer which pierces pipe-staves (Velázquez), *see carcoma* (1).

**COMER** (to eat), (1) *comerse los pilares*, Mex. to rob pillars, thereby letting down the hanging-wall or roof [*comp. despilar*], hence (2) to abandon a mine, *see abandonar*.

**COMERCIO**, commerce, trade, negotiation.

**COMIDO**, Mex. space excavated in a mine, *syn.* *labrado de cielo* (6), *comp. salón* (2).

**COMILLO**, a reverberatory furnace, *see horno* (2), *comp. comalillo*.

**COMINO** (cumin), Ant. Col. the classical wood of Antioquia; it is incorruptible, not being attacked by the white ant (*comején*), etc. There are two kinds, *liso* and *crespo*, the latter is a beautifully marked wood used for making boxes, cabinets, etc. (Angel). It is a laurel (*Aniba perutilis*, Kew), but is now scarce in the mining districts.

**COMPAÑIA**, company, *see sociedad*.

**COMPARTIMIENTO**, (1) compartment (of a shaft, etc.), *see cajón* (14); (2) *see campo* (4); (3) *c. de aire*, c.m. vent. brattice, *see tabique* (3).

**COMPÁS**, (1) pair of compasses; calipers; *c. de calibres*, inside calipers; *c. de espesores* or *de gruesos*, bow calipers; *c. de proporción*, proportional compasses; *c. de puntas curvas*, bow compasses; *c. de vara*, beam compasses; (2) surv. compass, *see brújula*; (3) size; (4) *sal de c.*, rock-salt, *see u. sal* (1).

**COMPASAR**, to measure with a rule and compass.

**COMPENSADOR**, compensator; *c. hidráulica*, pump, hydraulic compensator or counterpoise, *comp. contrabalanazón*.

**COMPRESIÓN**, compression; *c. del vapor*, st. eng. cushioning (Ponce de León).

**COMPRESORA DE AIRE**, air-compressor.

**COMPROMISO**, (1) a private engagement or undertaking; (2) joint-stock undertaking (M. J. Gloss.), *see sociedad*.

**COMPUERTA** (Port. *comporta*), (1) door of an ore-pass or shoot, trap-door, *see ventanilla* (2); (2) lock or sluice, flood-gate, *syn.* *arbolón* (1), *atajadero*, *bocacaz*, *ladrón* (1), *ladronera*, *paradera* (1); *c. de caz*, flood-gate; *c. de desagüe*, hydr. waste-gate; *c. de esclusa*, hydr. sluice-gate, penstock (Ponce de León), *see cárcel* (6), *fraile*, *gata*;



FIG. 29.  
Combona.



(3) vent. sliding-gate, cover or covering used in up-cast pit, *see* Fig. 30, *comp.* *cámara* (8); (4) Ant. Col. gold-mill. battery-screen in native mills, including the wooden frame or shutter above it, *syn.* *lámina* (2), *see* *criba*.

**COMPUESTO, TA**, adj. compound (of veins, etc.), *see* *u. filón* (1), and *trépano*.

**COMÚN**, adj. usual, general, ordinary (of ores, etc.); metal c., Pachuca, Mex. silver ore having less than 10 marcos per montón of 30 quintales, which is treated locally, *comp.* *primera* (*u. primero, ra*) and *segunda*, (*u. segundo, da*).

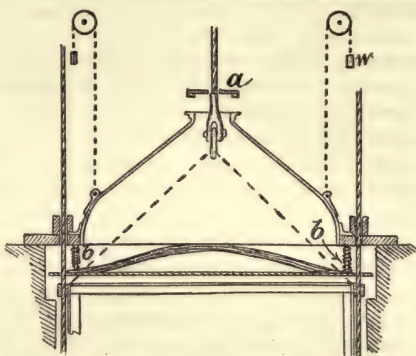


FIG. 30.—Compuerta (3) (after H. W. Hughes).  
*a*, tapa de la ventanilla, or movable shutter; *b*, resortes (springs); *w*, contrapesos (counter-weights).

**COMÚN**, Peru, average ore; **c.** general, ore of general average.

**COMUNA**, Chile, commune or parish.

**CÓNCAVA, CÓNCAVO** (concavity, hollow), m.m. plat, ore-plat, (Shropshire) lodge, (Lake Superior) pocket, (Sandhurst, Austral.) station, c.m. inset, hanging-on, (S. Staff.) mouthing, *syn.* *anchurón* (2), *cortadura* (2), Mex. despacho (3), enganche (2), estación (1), plaza (1) de enganche, punto (2) de enganche, recepción, ventanilla, equiv. Fr. chambre d'accrochage, chambre de recette, Ger. Füllbank, Fül'ort, (Austria) Fassstatt, *see* *cámara* (1).

**CONCAVIDADES**, top. regions which are lower than the sea-level, (Bárcena).

**CÓNCAVO**, *see* *cóncava*.

**CONCEDER**, to grant; **c.** una pertenencia, to grant a claim (Ger. verleihen), *see* registrar.

**CONCENTRACIÓN**, mech. prep. concentration.

**CONCENTRADOR, CONCENTRADORA**, mech. prep. concentrator or separator, an ordinary inclined table; **c. de rodela**s, round-buddle (Lucas), *see* *gandinguero*; **c. en seco**, dry concentrator.

**CONCENTRADOS**, mech. prep. concentrates, *syn.* Mex. *reconcentrados*, *see* *despáje*.

**CONCENTRAR**, mech. prep. to concentrate, *see* *despajar*.

**CONCERTADA**, *see* *u. mampostería* (2).

**CONCESIÓN**, (1) concession, grant, *syn.* Mex. merced; grant of claims, *see* *privilegio* (1); (2) a claim, *see* *pertenencia*.

**CONCESIONARIO**, grantee, holder of a claim (Fr. concessionnaire).

**CONCESIONISTA**, grantor.

- CONCHÍFERO**, Mex. a variety of shell-limestone, probably identical with *lumachello* of Italians, *see caliza*.
- CONCRECIÓN**, concretion ; *c. calcárea*, calcareous sinter ; **concreciones** *esferoidales*, spheroidal concretions, *see concreto*.
- CONCRECIONADO**, DA, adj. *see u. estructura*.
- CONCRECIONADOS**, deposits formed by chemical precipitation.
- CONCRECIONAR**, to form concretions.
- CONCRECIONARIO**, IA, adj. concretionary.
- CONCRETO**, concretion (*concreción*) ; concrete, *see hormigón*.
- CONDENSACIÓN**, condensation ; *máquina de c.*, condensing engine.
- CONDENSADOR**, st. eng. condenser ; *c. de superficie*, surface condenser ; *el. condenser* ; *c. de chispa*, spark condenser (Ponce de León) *c. de fuerzas*, mech. *see u. acumulador* (2).
- CONDENSAR**, to condense.
- CONDRÍN**, Phil. a weight for precious metals, one-tenth of a *mas* = 0.3768 g., *see u. tael* (2).
- CONDUCCIÓN**, carriage, conveyance, transport, *see transporte*.
- CONDUCTA**, (1) number of mules or horses conveying remittances, bullion, etc., under convoy ; bullion-train ; (2) remittances, bullion, etc., conveyed.
- CONDUCTO**, drain, conduit (*see u. caz*), pipe ; *c. de aire*, air-pipe ; *c. de vapor*, steam-pipe, *see tubo*.
- CONDUCTOR**, conductor, electrical conductor, etc.
- CONECTAR**, mech. to connect, couple up.
- CONEXIÓN**, (1) connection, coupling, clutch ; *c. de árbol*, *c. de eje*, shaft coupling ; *c. dentada*, toothed clutch (Ponce de León), *see embrague* (1), *enganche* (4) ; (2) *c. terrestre*, *el. earth*.
- CONFÍN**, limit, boundary, *see lindero*.
- CONFÍN**, **CONFINANTE**, adj. bordering upon, *see colindante*.
- CONFITILLO**, *see u. tequezquite*.
- CONFLUENCIA**, meeting of roads or rivers ; vent. meeting of two or more air-currents.
- CONGLOMERADO**, geol. conglomerate, *syn. pudinga*, *see cal y canto* (2), *cangalli*, *costra* (1), *frijolillo*, *gurgulho*, *losa* (2), *u. moco de tierra*, *u. tapatinga*, *comp. almendrilla* (1), *canga* ; *c. aurífero*, auriferous conglomerate or "banket" ; *c. rojo*, Guan. Mex. red conglomerate found at and near the surface with a cement of ferruginous clay (Ramirez), *see u. frijol*.
- CONGLUTINADO**, DA, adj. conglutinated or glued together, *see brecha* (2).
- CONGO**, Ant. Col. (1) iron ore in small fragments or pebbles (*guijarros*) which accompanies gold in placers, and is difficult to separate from it (Uribe) ; it is a kind of coarse black-sand or iron-sand, *see hierro* (4) ; (2) vein. m. oxide of iron, *comp. jagua* (2). NOTE.—The name is sometimes improperly applied to blende (*blenda*) by the miners, *see hierro* (4).

**CONMUTADOR**, el. electric switch, telegraph key, cut-out, commutator (Velázquez), *see* **cuadro** (5).

**CONO** (cone), (1) **c. de extracción**, Cataluña, Sp. a tool used in walling shafts in watery strata (**mampostería por humdimiento**); it consists of a spiral, with one turn, having a rim [**ala** (3)], and pointed at the lower end (**punzón**); the upper portion of the tool forms a cone for the reception of the **débris** (Molina), *see* Fig. 31;  
(2) **c. de fricción**, mech. friction-cone, friction-clutch;  
(3) **c. truncado**, conical drum, *see* **tambor** (1).

**CONOCIMIENTO**, (1) com. bill of lading; (2) com. identification paper; (3) Am. a check for baggage.

**CONSIGNACIÓN**, com. consignment, cargo of goods.

**CONSIGNADOR**, com. consignor.

**CONSIGNAR**, com. to consign goods or merchandise to a foreign correspondent [**consignatorio** (3)] to be sold for account of the consignors (Velázquez).

**CONSIGNATORIO**, (1) trustee, *see* **tenedor** (1); (2) mortgagee; (3) consignee, *see* **u. consignar**.

**CONSOCIO**, partner.

**CONSTRUIR**, to build or construct, *syn.* **edificar**, **eregir** (2), **fabricar**.

**CONSUMIDO**, Mex. mercury chemically lost in the patio process, *see* **u. lis**, *comp.* **pérdida**.

**CONSUMO**, consumption (of fuel, etc.); expenditure, *see* **gasto** (1).

**CONTABILIDAD**, book-keeping, the art of keeping accounts; auditing, *comp.* **teneduria**.

**CONTABILISTA**, accountant; book-keeper; auditor, *comp.* **tenedor** (2).

**CONTADO**, al **contado**, with ready money, for cash—*see* **contante**.

**CONTADOR**, (1) accountant; auditor (*see* **revisor de cuenta**); clerk; purser of a ship; *see* **tenedor** (2); (2) mech. counter, tell-tale; indicator; (3) meter for measuring water, gas or electric current.

**CONTADURÍA**, (1) accountant's or auditor's office; (2) auditorship.

**CONTANTE**, adj. **dinero c.**, ready money, cash, *see* **contado**.

**CONTENCIÓN**, c. de aguas, damming up waters.

**CONTINGENTE**, call made on shares, etc.

**CONTRA**, (1) *see* **contracajonero**; (2) *see* **u. malacate** (1).

**CONTRABALANZA**, *see* **contrapeso**.

**CONTRABALANZÓN**, Mex. pump. balance-bob or pump-bob, *syn.* Sp. **balancín de contrapeso**, **contrapeso** (2), **volante** (2) **de bomba**, equiv. Fr. **contre-balancier**, Ger. **Balancier**, *see* **u. bomba** (1), **compensador**.

**CONTRABISAGRA**, plate of a hinge (Ponce de León).

**CONTRACAJÓN**, Mex. branch or off-shoot of a vein or lode, *see* **ramal** (3).

**CONTRACAJONERO**, Mex. the workman who carries away the stuff sent up the shaft (Lyon), *syn.* **contra** (1).

**CONTRACAÑA**, counter-gallery (Ponce de León), *see* **contracañón**.



FIG. 31.

Cono de extracción  
(after Molina).



**CONTRACANAL**, channel or conduit leading from another one; counter-channel (Velázquez).

**CONTRACAÑON**, Pachuca, Mex. a gallery (galería) driven in the country on the footwall side of the vein, *see* **contracaña**.

**CONTRACARRIL**, transp. check-rail. guard-rail, safety-rail, wing-rail, guide-rail, *see u.* **corazón** (2).

**NTRACIELO**, (1) rise or (U.S.A.) raise, upraise, (Australia) jump-up, *syn.* **contrapozo**, **lumbrera** (2), Col. **tambor** (4), **tiro** (3), equiv. Port. (Braz.) **remontagem**, Fr. **montée**, Ger. **Ueberhauen**, *comp.* **clavada**, **chiflón** (4), **realce** (1); (2) Mex. roof-timbering which supports rock or waste, *see* Fig. 32, equiv. Ger. **Firstenverziehn**, **Firstenzug**, *comp.* **tapestle**.

**CONTRACLAVE**, the voussoir next to the keystone (clave) of an arch (arco).

**CONTRACLAVIJA**, mech. gib. *see u.* **clavija** (1).

**CONTRACORAZÓN**, *see u.* **corazón** (2).

**CONRADIQUE**, counter-dike, a second dike.

**CONTRAEJE**, counter-shaft, *see* **eje** (2).

**CONTRAFILÓN**, counter-lode, side-lode (Ponce de León), *syn.* **contra-vena**.

**CONTRAFUERTE**, (1) mas. buttress or pillar of masonry which supports a wall; abutment or pier of an arch, *syn.* **botarel**, **estribo** (2), **macho** (8), **machón**, **remachón**, *see* **cadena** (9), **pila** (7), **salmer**, *comp.* **pilar** (1); (2) Ant. Col. the portion of a lode between the main level and the intermediate level [**zapa** (2)] left intact as a support to the former, *see* Fig. 33, *syn.* **cuñas** (3), *see u.* **zapa** (2); (3) *see* **estribo** (1).

**CONTRAGUÍA**, (1) Mex. hoist. movable guide-pulley over shaft (Dwight); (2) in a pair of draught animals, the one which goes forward, to the left, *see* **guía** (6).

**CONTRAMADRE**, Mex. timb. a second pair of bearers, placed on the first pair, in shafts of large section, *see* **traviesa** (4).

**CONTRAMAESTRE**, overseer or foreman, *see* **capataz** (3); **c. fundidor** master-smelter (Ponce de León).

**CONTRAMINA**, (1) communication between two or more mines by which the waste or minerals can be extracted (Acad.); (2) an adit, *see* **socabón** (1).



FIG. 32.—Contracielo (2).

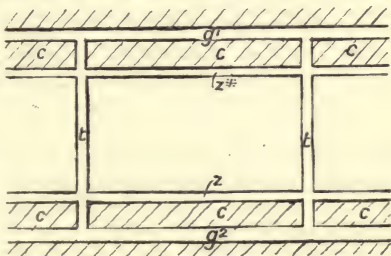


FIG. 33.—Contrafuerte (2).

**c**, contrafuerte; **g¹**, guía (9) or galería superior; **g²**, guía (9) or galería inferior; **t**, tambor (4); **z**, zapa; **z²**, zapa alta.

**CONTRAMUELLE**, mech. a duplicate spring (Velázquez).

**CONTRANATURAL**, Guan. Mex. a vein having a contrary dip to other veins of the same system, *e.g.*, Melladito, in La Luz district, dips S.E.—the others N.W. (Tilmann).

**CONTRAPALANCA**, lateral beam for strengthening the horse-arm or sweep of a horse-whim, *see palanca* (3).

**CONTRAPAR**, b. constr. rafter, *see cábrio*.

**CONTRAPESO**, (1) counterpoise, counterweight, counterbalance, *syn.* **contrabalanza**, equiv. Fr. **contrepoids**, Ger. **Gegengewicht**; counterweight used in lowering or raising men in shafts; **carrito c.**, counterweight in a simple automatic inclined plane (Fr. **chariot-contrepoids**); (2) pump. balance, bob, *see contrabalanazón*; (3) st. eng. load, governor-balls, balance, back balance (Ponce de León).

**CONTRAPOZO**, *see contracielo* (1).

**CONTRAPUNTA**, **contrapuntas**, timb. in spilling, movable struts which keep the breast or closing-boards in place, and which rest against the legs of the frame (Fr. **contrefiches mobiles**), *syn.* **contrapuntal**, *see* Fig. 34.

**CONTRAPUNTAL**, counter-stay (Ponce de León), *see contrapunta*.

**CONTRAPUNZÓN**, puncheon for driving in nails, etc., *see punzón* (3).

**CONTRARASPA**, in the **patio** process, the second scrapings obtained in cleaning up the bed of an **arrastre** (3), *comp. flor* (1).

**CONTRARESGUARDO**, Pachuca and Real del Monte, Hid. Mex. the timbers (bearers) which carry the winch below a pent-house, *see* Fig. 68, *u. resguardo*.

**CONTRARUEDA**, Ant. Col. in an overshot water-wheel, with water applied on the shoulder, the wooden channel or flume to prevent the water from splashing over the sides.

**CONTRASEÑA** (countersign), Mex. bell-signal (Dwight).

**CONTRASTAR**, (1) to assay (**ensayar**), verify and fix the standard, weight and value of coins, and other gold and silver objects, and to mark the latter; (2) to examine measures and weights.

**CONTRASTE**, (1) assayer of the mint, *see ensayador*; (2) Government assayer's office, where gold and silver are tried and marked, *see ensaye* (3); (3) examiner of weights and measures.

**CONTRATA**, deed of contract or agreement, *see contrato* (2).

**CONTRATANQUE**, Mex. a second settling-tank.

**CONTRATIRO**, Mex. an auxiliary pit, contiguous to the main pit or shaft, to serve as a footway, or for ventilation (M. J. Gloss.); division of a shaft for the above purpose (Ansa's MS. 1793), *syn.* **cópola** (2), *comp. boca* (2) **de mina**, **tiro** (1).

**CONTRATISTA**, contractor; **c. á destajo**, task-master.

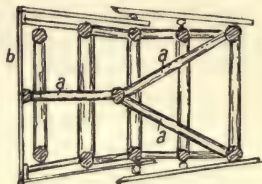


FIG. 34.—Contrapunta (after Goupillière).

*a*, contrapuntas; *b*, escudo or shield (Fr. **bouclier**).

- CONTRATO**, (1) contract, agreement, *see* **ajuste** (1), **convenio**, **igualada** (1), **pleito** (1); **c. á destajo**, contract by the job; (2) contract, a deed in which the terms of a contract or bargain are set forth, *see* **contrata**.
- CONTRAVERNA**, *see* **contrafilón**.
- CONTRETE**, mech. angle-tie, angle-iron, prop, stay; **c. de doble reborde**, channel iron, *see* **u. corchete** (Ponce de León).
- CONTRIBUCIÓN**, contribution, tax, impost; **c. directa**, assessed tax; **c. de renta** or **única c.**, income tax; **c. extraordinaria**, levy; **c. territorial**, land tax, *see* **impuesto**.
- CONTRIBUYENTE**, taxpayer.
- CONTRÍN**, Phil. a weight or 0.39 g., *comp.* **condrín**.
- CONVENIO**, agreement, contract, *see* **contrato** (1).
- CONVERSIÓN**, met. conversion, *e.g.*, of matte into bars.
- CONVERTIDOR**, met. convertor.
- COPA**, (1) **c. de aceite**, mech. oil-cup; **c. de grasa**, tallow-cup, *see* **engrasador** (2); (2) **c. de horno** (2), roof of a furnace.
- COPADOR**, Mex. blacksmith's fuller (Dwight), *see* **martillo**.
- COPAIBA**, (1) copaiba-tree, from which the copaiba gum or balsam distils, *syn.* **copayero**; (2) balsam copaiba, *syn.* **gamelo** (Indian name).
- COPAL**, copalite or mineral resin.
- COPALILLO**, (1) Batopilas, Chih. Mex. zinc blende, *see* **blenda**—sometimes spelt **copelilla**; (2) Zac. Mex. cerussite, *see* **plomo** (2).
- COPAQUIRAS** (Barba) = **caparrosa**.
- COPAYERO**, *see* **copaiba** (1).
- COPELA**, (1) assay. cupel, *syn.* **cendra** (2), *see* **tasco** (2); (2) met. test of a cupelling-furnace, *syn.* **cendrada** (1), *see* **cendra** (1); (3) **oro de c.**, fine gold; (4) **horno de c.**, *see* **u. horno** (2).
- COPELACIÓN** (Port. **copellacão**), assay. and met. cupellation.
- COPELAR** (Port. **copellar**), (1) to assay by cupellation; (2) met. to cupel.
- COPELILLA**, *see* **copalillo**.
- COPELLA**, Mex. in the **patio** process, dry amalgam (**amalgama**) remaining in the canvas bag after draining, *comp.* **pasilla**.
- COPEY**, Ec. a bitumen (**betún**), employed in repairing ships (Velázquez).
- COPIADOR**, com. letter-book, *syn.* **libro c.**
- COPIAR**, to copy, draw, trace.
- CÓPOLA**, (1) cupelling-furnace, *see* **capella**, **horno** (2); (2) *see* **contratiro**.
- COPOS**, Mex. (1) in the **patio** process, little globules of quicksilver formed too quickly in amalgamation; (2) amalgam (**amalgama**) in the form of little globules or dry particles, *see* **pasilla**.
- CORAL**, (1) carp. red sandal; (2) **madera de c.**, Andaman redwood (Ponce de León).
- CORAZA**, cuirass or shield of a safety-lamp (Molina), *see* **u. lámpara**.



**CORAZÓN** (heart, core), (1) pith of a tree, heartwood; (2) transp. point where two rails meet at an acute angle (*see* Fig. 35 *a*), *syn.* punta (2), *b* = *contracorazón* or *pata de liebre*, *c* = *contracarril* (Fr. *contre-rail*), *comp.* *cambio* (1), *rana*; (3) *c. de tres ramales*, rail. three-throw switch (Ponce de León), *see* *cambio* (1); (4) *excéntrica de c.*, eccentric which moves the Riedler valves (Molina).

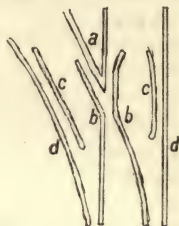


FIG. 35.—Corazón (2).

**CORCHADO**, the twisting of threads [*hebras* (1)] and strands [*cordones* (2)] of hempen rope (*cañamo*), *comp.* *filástica* [*u. hebra* (1)].

**CORCHE**, cork, *see* *corcho*.

**CORCHETE**, (1) bench-hook or cramp of a carpenter's bench, *comp.* *gato* (2); (2) *c. de doble reborde*, channel iron, *see* *contrete*.

**CORCHO**, cork, *syn.* *corche*; *serrón de c.*, cork sawdust; for *asbesto de c.*, *see u. asbesto*.

**CORDADA**, surv. cord or distance between two stations.

**CORDEL**, (1) cord, a rope of several strands, *see* *cuerda* (1); (2) strand of a hempen rope, *see* *cordón* (2).

**CORDILLERA** (Port. *cordilheira*), top. a chain, ridge or range of mountains; the Andes, in some parts of S. America, are divided into three ranges known as the eastern, central and western *cordilleras* respectively, *see* *cadena* (4), *gajo* (2); *comp.* *cuchilla*, *paramilla*.

**CORDÓN**, (1) cord or string, *see* *cuerda* (1); (2) *cordones*, strands of a hempen rope made of various threads [*hebras* (1)], *syn.* *cordeles* (2), *ramales* (1); strands of a wire-rope, *syn.* *ramales* (1); (3) Mex. a rib or band of ore in a vein, *see* *cinta* (2); (4) *c. mineralizada*, a feeder (Chalon).

**CORI-BRONCE**, Potosí, Bol. copper pyrites; it is not uncommon, but when found is taken as a sign of rich mineral being met with (M. Roberts), *see* *pirita*.

**CORINDÓN**, corundum, *syn.* *corundo*, *see* *amatista* (2), *tibe* (1), *topacio* (2), *zafiro* (1).

**CORNALINA**, cornelian or a red var. of chalcedony, (*calcedonia*) *syn.* *cornelina*, *cornerina* (1).

**CORMANO**, Mex. loading-chute (Dwight), *see* *paso* (2).

**CORNAMUSA**, Peru, earthen retort (*retorta*) with movable cover (Dwight).

**CORNELINA**, *see* *cornalina*.

**CÓRNEO**, EA, adj. horny; *piedra córnea* (Port. *pedra de corno*), hornstone, *see u. cuarzo*, *pedernal* (1), *pórfido* (2), *u. tecpatl*; *plata córnea*, horn silver, *see u. plata* (2).

**CORNERINA**, (1) *see* *cornalina*; (2) *onyx*, a kind of agate, *see* *ónix* (1).

**COROA**, Port. crown, top of a mountain, *see* *cima*.

**CORO-CORO**, Bol. (1) crude native copper pyrites, *see* **pirita** ; (2) dressed product of copper works = grains of native copper mixed with pyrite, chalcopyrite, mispickel and earthy minerals (Dr. Raymond).

**CORONA** (crown), (1) the boring-bit or crown of a diamond border, *see* **bisel** (2) ; (2) **c. cortante**, cutting-ring used in passing through watery strata in the method known as **mampostería por hundimiento**, *syn.* **anillo** (1) **cortante**, Cataluña, Sp. **caja** (9) **del pozo**, Almería, Sp. **marranete**, *see u.* **banqueta** (1) ; (3) crown-wheel of a Chilian mill ; **coronas**, Ant. Col. wooden bevel-wheels used in native mills ; *comp.* **rodezno** (2) ; (4) wedging crib, *see* **rodete** (3).

**CORONACIÓN**, *see* Fig. 8 (*u.* **arco**).

**CORRAL**, (1) yard, enclosure ; **c. de madera**, timber-yard ; (2) Real del Monte, Hid. Mex. a complete set of prop crib-timbering, *see u.* **ademe** and **encubado** (1) ; (3) S. Am. = 5857 hectares or 13,997 acres (Ponce de León).

**CORRALERO**, stableman or person in charge of a corral or stable.

**CORREA** (Port. *correa*, *correia*), (1) leather strap or thong ; **c. de cincho**, girth strapping ; (2) leather belting, *syn.* **c. de transmisión** ; **c. de fricción**, friction band ; **c. en aspa**, crossed belt ; **c. sin fin**, endless belting (Ponce de León), *see* **correaje**, **faja** (4) ; (3) **metal de c.**, S. L. Potosí, Mex. nearly pure cassiterite (J. P. Manzanos), *see* **estaño** (2), *comp.* **plomillo** ; (4) **correas**, b. constr. horizontal timbers which tie the rafters of a roof together, *see* **cábrio**.

**CORREAJE**, mech. shafting, shaft-leather ; **c. de alambre**, **goma**, **cuero**, wire, rubber or leather belting, respectively (Ponce de León), *see* **correa** (2).

**CORREDERA**, (1) runner or upper grindstone, *see* **muela** (1) ; (2) st. eng. slide-valve, *syn.* **válvula de c.** ; **c. del cortavapor**, cut-off valve or slide ; **c. de Stephenson**, Stephenson's link-motion (Fr. *coulisse de Stephenson*) ; (3) mech. tongue, rail, guide, runner ; (4) **c. de Oeynhaussen**, bor. Oeynhaussen's sliding-joint (Fr. *coulisse*), jar or links, *see also u.* **aparato**, **junta** (5) ; (5) Cartagena, Sp. a guide of **H** form, used in hoisting kibbles or **esportones**, with flat ropes of Manila hemp (**abacá**) ; (6) **puertas de c.**, sliding-doors (Fr. *portes à coulisse*).

**CORREDERO**, Ant. Col. the ancient bed of a river, *syn.* **cauce** (1) **antiguo**, **madre** (1) **vieja**, *see* **álveo**.

**CORREDOR**, broker ; **c. de acciones**, stockbroker ; **c. de cambio**, exchange broker.

**CORREGO**, Port. (1) ravine, *see* **barranca** (1) ; (2) channel of an alluvium ; (3) **corregos**, Braz. streams where the auriferous **cascalho** is washed, *comp.* **arroyo** (1).

**CORREO**, (1) postman, mailman, mail-carrier ; (2) post office ; (3) mail, mail matter.

**CORRER**, (1) to flow (of liquids) ; (2) mech. to travel, slide.

**CORRETAJE**, brokerage, *syn.* **banca** (3).

- CORRIDA**, (1) mech. travel, sweep, play of a valve, etc., *see u. carrera* (5); (2) strike, *see rumbo* (3).
- CORRIDO**, **DA**, pp. of *correr*; metal *corrido*, alluvial ore; oro *corrido*, alluvial gold; *veta corrida*, continuous vein (Dwight); *see torno* (3).
- CORRIENTE**, (1) course or flow of rivers, current of a stream, *syn. corrimiento* (3); (2) *c. de agua*, water-course, leat, *see acequia*; (3) *el. current*; *c. alternativo trifaciado*, three-phase alternating current; *c. de aire*, vent. air-current; (4) Peru, all the operations required for extracting metal on a large scale from one class of ore (Dwight).
- CORRIMIENTO**, (1) hydr. delivery, flow, discharge, *see descarga* (3); (2) *c. de tierras*, geol. landslip, landslide (Ponce de León), *see derrumbe* (2); (3) course or flow of rivers, *see corriente* (1).
- CORRIVACIÓN**, a diversion of streams, etc., in order to unite their discharge (*caudal*).
- CORTA**, (1) felling of trees, *see corte* (10); (2) open-cut, *see tajo* (2).
- CORTADA**, (1) Ant. Col. alluv. m. a straight cut made to communicate two bends of a river, in order to work the bed of the river at the bend (Muñoz); (2) Chile, cut or drivage on a vein; (3) Chile, any working driven to cut a vein, *e.g.*, cross-cut, *see crucero* (1).
- CORTADERA**, (1) chisel [*cincel* (1)] for cutting hot iron, *comp. cortafrío*; (2) kind of shovel, *see u. cava* (2).
- CORTADOR**, **RA**, adj. *batea cortadora*, *see u. batea*; *estacadas cortadoras*, *see u. pilote* (2).
- CORTADOR**, (1) *c. del regulador*, st. eng. governor cut-off; *c. de vapor*, steam cut-off, *see cortavapor*; (2) *c. de leña*, wood-cutter, *see leñador*.
- CORTADORA**, drilling machine, *see perforadora*.
- CORTADURA**, (1) top. pass, *see paso* (4); (2) plat, *see cóncava*.
- CORTAFRÍO**, cold chisel; chisel [*cincel* (1)] for cutting cold iron, *syn. cortahierro, tajadera* (2), *comp. cortadera* (1).
- CORTAHIERRO**, *see cortafrío*.
- CORTAR** (to cut), (1) *c. un árbol*, to fell a tree, *see corte* (10); (2) *c. en bisel* (1), carp. to bevel, to chamfer; (3) *c. el vapor*, to cut off steam; (4) *c. la corriente*, *el.* to break contact; (5) *c. alturas*, to cut a trench [*zanja* (1)] at the outcrop of a deposit, and afterwards deepen it as far as practicable by underhand stoping, the sides being supported by timbers and masonry (Molina); (6) *c. pilar*, Mex. to form a pillar in a mine for use as a sollar or bunding [*camada* (3)] and in order to form a cross-passage (Gamboa); (7) *c. sogas* (to cut the ropes), to abandon mines and their shafts (Gamboa), *see abandonar*; (8) *c. el oro*, Ant. Col. to separate gold from the *jaguas* (3) in a *batea*; *poderse cortar á cincel* is a phrase used figuratively of a rich mine (Uribe); (9) *c. cuentas*, com. to balance accounts; (10) *cortarse*, *see se corta*.
- CORTATUBOS**, bor. tool for cutting tubes (Fr. *coupe-tuyaux*).
- CORTAVAPOR**, st. eng. cut-off, *see u. cortador* (1), *corte* (13).
- CORTAVIDRIOS**, glazier's diamond.



**CORTE**, (1) edge of any cutting instrument, cutting edge of a borer, etc., *see* *bisel* (2); (2) cut or opening in a mountain, *see* *tajo* (1); (3) *c. vertical*, plott. section; (4) Peru, opening to an ore-deposit, either a shaft or drift (Dwight), *see* *boca* (2); (5) shaft made in searching for a vein of mineral (Velázquez), *see* *cata* (4); (6) Peru, pay-streak left clear so that ore can be knocked down without becoming mixed with waste (Dwight), *see* *desanchar*, *desanche*; (7) Ant. Col. working of a portion of a placer or of a vein at surface; (8) Ant. Col. stope, *see* *grada* (2); *cortes*, stopes or block of ground ready for stopping, *see* *macizo* (2); (9) *oro de c.*, Ant. Col. gold extracted from placers worked on a large scale; (10) *c. de madera*, felling of trees, *syn.* *corta* (1), *tala*; dressing; (11) timb. scarfing, formed of the "scarf" or "face" (if short) and the "cut," *syn.* *entrada* (7); *c. en cola de milano*, carp. dovetailing; *c. en chaflán*, bevel cut; (12) *c. de piedra*, stonecutting; (13) *c. del vapor*, cutting off the steam, *see* *cortavapor*; (14) *c. de través*, carp. cross-cut; (15) *c. transversal*, cross-opening in mines; (16) *c. en escalones*, mining by banks (Ponce de León); (17) *c. de caja*, com. balance-sheet of accounts (Dwight).

**CORTERO**, Ant. Col. *peon* who works in the stopes [*cortes* (7)].

**CORTEZA**, (1) bark of a tree, *syn.* *cáscara* (1); (2) *c. terrestre*, earth's crust, *comp.* *costra* (2).

**CORTINA** (curtain), mas. layers or dry wall [*muro* (1)] of stone, resting horizontally on masonry (Molina), *see* Fig. 8, *u.* *arco*; *c. de muelle*, quay-wall on banks of a river or on sea-shore.

**CORUNDO**, corundum, *see* *corindón*.

**CORVADURA**, bend of an arch (*arco*) or vault.

**COSTA**, *see* *costo*.

**COSTADO** (side), side of a pit, gallery or shaft, *syn.* *tabla* (2), *see* *hastiales* (2), *pared* (2), *comp.* *boca*, *caldera* (5), *piso* (4), *techo* (2); *costados*, the long sides of a shaft, *comp.* *testeros* (4); *costados laterales*, *see* *costero* (2).

**COSTAL**, sack or large bag; in Mex. an ore-sack made of the thread of the aloe [*pita* (2)], each sack contains 150 lb.; a *costal de jarcia* (cordage) is generally used, but if the ore is very rich and contains *tierras* (4), a *costal* of leather or hemp is employed, *syn.* Mex. *camino* (3) or *saca*, *see* *saco* (1).

**COSTALERA**, ore-sacks (collectively) (Dwight).

**COSTANERA**, (1) *see u.* *cuesta* (1); (2) rafter, *see u.* *viga*.

**COSTE**, *see* *costo*.

**COSTEABLE**, Mex. workable or payable (of mines, etc.).

**COSTEAR**, to pay the cost; *costearse*, to pay for itself (Dwight).

**COSTERO**, (1) slab or outside piece taken from round timber in sawing it into planks, *syn.* *costilla* (3); *costeros*, timb. slabs used as lagging, equiv. Fr. *dosses*, Ger. *Schwarten*, *see* *revestimiento* (1), *u.* *revestir*; (2) *costeros*, met. lateral sides of the shaft of a furnace, *syn.* *costados*

laterales, *see* cuba (4); (3) side of a mineral deposit (Acad.), *see* hastial (1).

**COSTILLA** (rib), (1) stave of a barrel, *see* duela (2); (2) b. constr. strengthening-piece of joists, *see* u. viga; (3) slab, *see* costero (1); (4) Mex. timb. lagging-board, *see* estaca (6), Fig. 18 u. brocal (1), revestimiento (1); (5) lagging of a drum, windlass, etc., *see* u. torno (2); (6) sacar á c., or á espalda, to carry out ore, etc., on the shoulders, *see* burrear.

**COSTILLAR**, *see* encostillado.

**COSTO, COSTA, COSTE**, (1) cost or price; c. neto, net cost; al costo, at cost price; (2) cost, expense; working cost; c. de beneficio, cost of reduction, *see* gasto (1), presupuesto.

**COSTRA** (crust), (1) Chile, a conglomerate (conglomerado) of clay, gravel, and felspar immediately overlaying caliche (1); (2) scale or portion of a lode or rock, which breaks off in scales or flakes, *comp.* corteza (2).

**COSTURA**, (1) carp. a joint between two pieces of wood (naut. = seam), *comp.* ajuste (3); (2) splice (of vegetable ropes), *see* empate (2).

**COTA**, surv. a number indicating the height of a point above the sea or some other level (Acad.); c. de referencia, bench-mark.

**COTANA**, mortise, mortise-hole, *see* muesca (1).

**COTE**, Port. whetstone, *see* muela (4).

**COTENSE**, Mex. (1) coarse brown linen wrapper (Velázquez); (2) Calamahi, L. Cal., a piece of blanket, about one metre square, used by the gambucinos (1) or gold prospectors (J. M. Ramos); (3) miner's sash-cloth or breech-clout (Dwight), *see* patío, u. vestido.

**COTICULA**, Port. touchstone (piedra de toque).

**COTIZACIÓN**, com. quotation; price-list; current price.

**COTO**, (1) surv. landmark of rough stone, *see* mojón (1); (2) prov. territory, district, *see* distrito; (3) c. minero, a group of mines (Ger. Grubencomplex) (Venator); (4) hand-breadth, *see* u. tabla (1).

**COUTARA**, *see* u. guayacán.

**COVA**, *see* u. caliche (1).

**COVACHA**, a small cave, *see* cueva (1).

**COYOTE**, S. Am. (1) native, of the country; domestic; (2) Mex. a kind of wolf, coyote; (3) Mex. a man who buys or sells mining shares (Dwight).

**COZ**, (1) Pachuca, Hid. Mex. timb. a hitch for stemples, etc., *see* huida (1); (2) Ant. Col. pointed end of a leg-piece. NOTE.—Vertical posts, with pointed ends, have been in use for at least twenty years in the Remedios district, as well as at Marmato, Cauca.

**CRAS**, *see* craza.

**CRASAS** (Fr. crasses), (1) slag, *see* escoria (1); (2) dross, *see* escoria (2).

**CRATER**, crater of a volcano; *syn.* boca (11) del volcán, Tenerife, caldera (6).

**CRAZA**, Mex. in the *patio* process, an iron cup [cage] or frame into which the burnt silver is put, with a quantity of charcoal, for its final process of melting—from the *craza* it falls into the *jantilla* (Lyon); a receptacle for melted metal (Velázquez). NOTE.—Lyon spells it *cras*.

**CRÉ**, Port. chalk. *see* *creta*.

**CRECIDA**, freshet, swollen state of rivers in consequence of heavy falls of rain (Velázquez); *c. grande de agua*, sudden flood, *see* *avenida*, *creciente*, *venida*.

**CRECIENTE**, swell, freshet of waters, flood, *see* *crecida*, *u. verano*; for *luna c.*, *see u. menguante*.

**CRÉDITO**, (1) credit; (2) note, bill, order for payment; *créditos activos*, assets; *créditos pasivos*, liabilities (Velázquez).

**CREMALLERA**, mech. rack; toothed bar, *see u. ferrocarril*.

**CREMINEL**, Brit. Guiana, alluv. m. a peculiar shaped shovel [*pala* (1)] used by the natives for removing the overburden [*montera* (3)]. It is shaped something like a spade, but much narrower, and is kept sharpened to a keen cutting edge (H. Tweddle).

**CRESPO**, PA, adj. crisp, curled; *oro crespo*, *fino* or *de monte*, Ant. Col. gold which has come from a distance, and which is known by its being more or less rounded, and having a polish (Uribe); for *comino crespo*, *see u. comino*.

**CRESTA**, (1) crest or top of a ridge or mountain, *see* *cima*; (2) axis of an anticlinal or synclinal fold, *syn. arista* (3), *eje* (1).

**CRESTÓN** (crest of a helmet), outcrop, strictly speaking the portion of a mineral deposit which stands up above the general surface, and becomes detached thereon—*syn. Mex. cabeza* (3), Peru, *farallón* (2), *montera* (1), *reventadero* (2) or *reventazón*, Ant. Col. *vómito*, *see* *afioramiento*.

**CRETA**, chalk, *syn. prov. buro* (1), *greda* (3), *tizate*, Ant. Col. *toba* (3), equiv. Port. *chalco*, *cré*, *see* *tiza* (1).

**CRIADERO**, (1) ore or mineral deposit, *syn. mina* (1), *venero* (7), *yacimiento* (1); includes *capa* (1), *filón*, *masa* (1), etc.; *c. de contacto*, contact deposit; *c. detrítico*, *see u. aluvión*; *c. en árbol*, ramification; *c. en filón*, vein-deposit of considerable extension, preserving a certain uniformity in length, depth and thickness; *c. en veta*, vein-deposit, not necessarily of great length, and variable in depth and thickness; *c. en capa*, stratified deposit; *c. en manto*, bedded vein; *c. en masa*, c. irregular or *bolsada* (3), irregular deposit; *c. en riñones*, small irregular deposits, *see* *masa* (1); (2) Mex. a deposit like a bag [*bolsa* (1)] or cave [*bóveda* (2)] in which the ore is loose; a chamber-deposit, *syn. bovedal*, *see* *clavo* (2), *salón* (1); (3) origin of ore-deposits, genesis (*génesis*); (4) Ant. Col. alluv. m. gold found in the heads of rivers or streams, *see* *oro*; (5) *see u. cabecilla* (1); (6) obs. creation or growth of ores; “the Decree [1741] ends by declaring the district of Arizona to be Royal Property, as a ‘Criadero de Plata’ (a place in which, by some natural process, silver was created); an idea to which the



flexibility of the metal, when first extracted, seemed, in those times, to give some colour of probability" (Ward); (7) Chile, matrix, *see* matriz (1).

**CRIBA** (Port. *crivo*), Mex. orig. perforated leather, used as a screen; ore falls through the holes in the *criba* (or *harnero*) into pits below (Lyon); a sieve, *syn.* *cribo*; grizzly, *see* *parrilla* (2); jigger, jiggingsieve; *c. cilíndrica*, *c. cónica*, *c. giratoria*, *c. rotatoria*, *c. tromeliforme*, revolving screen or trommel, *syn.* *cernidor* (4), *tambor* (2), *trómel*; *c. con pistón*, *c. de pistón*, plunger or piston-jigger; *c. de vaivén*, shaking-screen or sieve; *c. hidráulica*, jigger; *c. movida*, *c. de percusión*, percussion-jigger; *c. móvil manual*, hand-jigger, *see* *riquitrúm*; *c. móvil mecánica*, machine-jigger; *c. plana de percusión*, flat shaking-screen; *see* *basto* (2), *cedazo* (1) and (2), *coladera*, *compuerta* (4), *lámina* (3), *reja* (1), *rejilla* (1), *tela* (2), *zaranda* (1).

**CRIBACIÓN**, *see* *cribadura*.

**CRIBADO**, (1) *see* *cribadura*; (2) Villanueva del Rio, Sevilla, Sp. screened coal from 30 to 100 mm. (Molina), *comp.* *grancilla*, *u. grueso* (2).

**CRIBADOR**, ore-screener.

**CRIBADURA**, mech. prep. sieving, jiggling or screening, *syn.* *cribación*, *cribado* (1), equiv. Fr. *criblage*.

**CRIBAR** (Port. *crivar*), mech. prep. to screen, jig or sift, *syn.* *harnear*, Peru, *tamizar*, *zarandar*, equiv. Fr. *cribler*, *see* *cernir* (1).

**CRIBO**, *see* *criba* (2).

**CRIC**, jack-screw, lifting-jack, *see* *gato* (1); *c. de cremallera*, rack-jack; *c. de palanca*, lever-jack; *c. hidráulica*, hydraulic jack (Ponce de León).

**CRISÓCOLA**, (1) *chrysocolla*; (2) gold solder; (3) borax (*bórax*).

**CRISOL**, (1) assay crucible, equiv. Braz. *cadinhos*; *c. de arcilla refractaria*, fire-clay crucible; *c. de grafito*, black-lead crucible; *c. embrascado*, crucible lined with charcoal (Ponce de León), *see* *tasco* (2); (2) met. crucible of a large furnace, *syn.* *c. de horno* (2); crucible of a blast-furnace, *syn.* *banco* (6), *pileta* (3), *taza* (2), *vaso* (4), *see* *cendrada* (3), *comp.* *obra* (5); (3) met. slag-pot.

**CRISOLADA**, (1) crucible full of molten metal; (2) crucible charge.

**CRISOLERO**, Mex. slag-pot puller (Dwight).

**CRISTAL**, (1) crystal; *c. de roca* (Port. *crystal de rocha*), rock crystal, *syn.* *claveque*; *c. mineral*, salt dissolved in its water of crystallisation and mixed with a little potassic sulphate; *c. tártaro*, cream of tartar; (2) flint-glass.

**CRISTALILLO**, (1) hyaline quartz (*cuarzo*); (2) salts crystallised out from their mother liquor; Moctezuma, S. L. Potosí, Mex. the Tapado salt lagoon contains in solution, chloride of sodium, with sulphate, carbonate and borate of sodium, which give, in the first crystallisation, the salt called *crystalillo* (A. del M. de F.), composed of the above.

**CRISTALIZACIÓN**, crystallisation.

**CRISTALIZADORA**, apparatus for crystallising salt; vessel in which salt is crystallised.

**CRONOTAQUIGRAFO**, *see* tachografo.

**CROQUIS**, sketch, rough draft.

**CRUCE**, *see* cruzamiento (3).

**CRUCERO, RA**, adj. veta crucera, cross-vein, *see* crucero (2).

**CRUCERO**, (1) m.m. cross-cut, *syn.* barreno (7), Chile, *estocada*, trabajo transversal. NOTE.—A cross-cut in “country” or dead rock = crucero (Ant. Col. cruzada) or travescajas, equiv. Fr. *galerie à travers-bancs*, Ger. *Querschlag*, *Querort*, while a cross-cut in a mineral deposit, but perpendicular to its direction = transversal, Asturias, Sp. transversal de recorte [*see* recorte (2)], Col. travesia or traviesa (1), equiv. Fr. transversal, *galerie traverse*, Ger. *Durchzug*, *see* cortada (3), *u.* galería (1), sangría (3). Método de cruceros, transverse working or cross-cut method (Ger. *Querbau*), *see* través; (2) cross-course, cross-vein or lode, *syn.* veta transversal; c. de cuarzo, cross-spur; *see* banco (5), caballo (8), *u.* crucero, ra, cruzador, cruzante; (3) cruceros, timb. end-pieces, end-plates or end-timbers of a shaft frame [*cuadro* (1)], *syn.* Mex. cabezadas (2), Zac. Mex. cabezales (1), Pachuca, Hid. Mex. hembras (1), Guan. Mex. llaves (12) or puntales (4), equiv. Ger. *Pfändungen*, *Haupthölzern*, *comp.* largueros (2); (4) mineral. and geol. cleavage, *see* cara (7), clivaje, exfoliación; (5) piece of timber which lies across the rafters in a building (Velázquez), *see u.* viga; (6) crossing of roads; railway crossing, *see* cruzamiento (1); (7) crossing of air-currents, *see* cruzamiento (2); (8) crossing of two veins, *see* cruzamiento (3); (9) cruceros, Chile, minute veins, oblique both in direction and dip to the lodes, the latter being largest and richest at the junction (Henwood); (10) cruceros, Cartagena, Sp. hoist. the two cross-beams of the pulley-frame of a malacate (1), on which the barras (9) rest which carry the pulleys, *comp. u.* pastores.

**CRUCETA**, mech. cross-head (Fr. *traverse de tête*) of an engine.

**CRUDO, DA**, adj. raw, unroasted, *see u.* fundición (2).

**CRUZ** (cross), (1) crossing of two roads, *see* cruzamiento (1); (2) crossing of air-currents, *see* cruzamiento (2); (3) crossing of two veins, *see* cruzamiento (3); (4) *see u.* espeque (1); (5) piedra de c., cross-stone or harmotome; (6) c. de San Andrés, cross-stays, diagonal stays, *see* Fig. 15, *u.* barra (9); (7) Mex. arms of a scale (Dwight); balance beam, *see* balanza (3); (8) *see* caer de cruz; (9) met. wall which divides the bed of Spanish reverberatory furnaces (Acad.), *see* horno (2); (10) cruces, in tahonas (flour mills worked by horses) the four sticks (palos) which, in two directions at right-angles to each other, embrace the axle and secure the crown of the principal wheel (Acad.).

**CRUZADA**, Ant. Col. cross-cut, *see* crucero (1).

**CRUZADILLAS, CRUZADILLOS**, *see u.* cúmulo (2) and montón (3).

**CRUZADO, DA**, adj. filón cruzado, veta cruzada, a lode or vein which is crossed by another, *syn.* atravesado (3), *comp.* cruzante.

**CRUZADO**, *see u. cruzador*.

**CRUZADOR**, Ant. Col. a cross-vein or lode, *see* **crucero** (2); a vein crossed by another = **cruzado**, or **veta cruzada**.

**CRUZAMIENTO**, (1) transp. crossing of galleries or underground roads, *syn.* **crucero** (6), **cruz** (1), equiv. Fr. **croisement**; railway crossing, *syn.* **encrucijada**; (2) vent. crossing of air-currents, air-crossing, overcast, bridge, *syn.* **crucero** (7), **cruz** (2), equiv. Ger. **Wetterbrücke**; (3) crossing of two veins, *syn.* **cruce**, **crucero** (8), **cruz** (3).

**CRUZANTE**, a vein which crosses another and is therefore more modern, *syn.* **atravesante**, *see* **padrastal**, *comp.* **cruzador**.

**CRUZAR**, to cross a lode, *see* **atravesar**; **cruzarse**, to cross (of veins, dikes, etc.).

**CUADERNO**, *see u. ordenanzas*.

**CUADRA**, (1) stable, underground stable, *syn.* **establo**; (2) Am. a block of houses; (3) one-quarter of a mile (**milla**); in Arg. = about 128 m., in Chile = about 130 m., in Col. (c. **granadina**) = 80 m., in Paraguay = 72.15 m., in Spain = 83.59 m.

**CUADRADO**, (1) a square, *see* **escuadra** (1); (2) timb. a frame, *see* **cuadro** (1); (3) **de cuadrado**, adv., **mueve de c.**, mas. said of an arch (**arco**) whose imposts are in a normal or horizontal position, *comp. u.* **salmer**.

**CUADRAL**, carp. angle brace, truss; mech. diagonal tie (Ponce de León).

**CUADRANTE**, quadrant, *syn.* **cuarta** (1).

**CUADRAR**, to square, to square timbers; to regulate, adjust.

**CUADRILLA**, (1) gang, crew; c. **de operación**, a "pare" or gang, *see* **parada** (3); (2) Mex. a settlement, *comp.* **pueblo** (1).

**CUADRO**, (1) timb. frame, *syn.* **armadura** (1), **bastidor** (5), **marco** (2), equiv. Fr. **cadre**, Ger. **Geviere**; a shaft frame, set or crib, *syn.* **cárcel** (1), *see* **llave** (12); c. **de asiento** or **fundamental**, bearing-frame, *see* **cincho** (4), **crucero** (3), **largueros** (2); a square set for stopes (*see* **tranca**), etc.; a complete frame or set for a level, *see* **portada**, **puerta** (4); c. **falso**, c. **provisional**, false set; (2) **laboreo por cuadros**, c.m. panel-working, *see* **cuartel** (2); (3) a block of ground ready for stoping, *see* **macizo** (2); (4) Ant. Col. a balk or "bunton," also timber from 5 inches to 20 inches square, *comp. u.* **cuartón** (1), **listón**; (5) c. **de distribución**, el. switch-board, *see* **conmutador**, **tablero** (8).

**CUADROCLAVE**, in tubbing, the frame or curb which rests on the lowest wedging-curb (**rodete**), equiv. Fr. **clef**.

**CUAJADO**, Mex. (1) argentiferous carbonate of lead, which serves as **metal de ayuda** (A. del M. de F.); (2) Zimapan, Hid. coarse galena, *see* **plomo** (2).

**CUAJAR**, to evaporate brine.

**CUAJE**, total evaporation of brine or salt water, *see* **era**.

**CUARACHE**, Guan. Mex. a layer of unctuous clay, more or less thick, occurring between the vein and the "country" (A. del M. de F.); clay selvage or flucan, *see* **guarda** (1), **urgue** (2).



**CUARCITA**, quartzite, *see* **molix**.

**CUARTA**, (1) quadrant, *see* **cuadrante**; (2) piece of timber of square section; (3) Mex. riding-whip.

**CUARTEADOR**, Ant. Col. in the Zancudo mine, the miner who works **cuarteo** (3).

**CUARTEADURA**, S. L. Potosí, Mex. fissure in rocks, *see* **abra** (3).

**CUARTEAR**, to break up large stones with a sledge-hammer.

**CUARTEL**, (1) Ant. Col. barracks for miners, peons, etc.; (2) underground section or district, *see* **campo** (4); vent. panel, district or group of workings, *see* **cuadro** (2).

**CUARTEO**, (1) Ant. Col. transitory suspension of the rains in winter (*i.e.*, the rainy season) (Uribe); (2) Ant. Col. night work in which "pares" [**paradas** (3)] of peons alternate in the adits (Uribe); (3) Zancudo mine, Ant. Col. a system of working by which the ore is bought of the miners by the company at a certain price—the former feed themselves, while the latter sells them candles, powder, etc. (Gamba), *comp.* **partido** (3); (4) Mex. work on drill-holes, paid for by the foot, yard, metre, etc. (Dwight); (5) the breaking up of large stones with a sledge-hammer, *see* **cuartear**.

**CUARTILLA**, one-fourth of an **arroba**, one-sixteenth of a **quintal**.

**CUARTILLO**, one-fourth of a **fanega**; one-fourth of a **real** (4).

**CUARTO**, (1) quarter; **c. menguante**, last quarter of the moon, *see* **menguante**; (2) room in a mine for keeping tools, lights, etc.; **c. de máquinas**, engine-room; (3) Mex. a shift, **c. primero**, **c. segundo**, and **c. tercero**, day, afternoon and night shift, respectively (Dwight), *see* **relevo**; (4) **minero de c.**, Mex. underground captain, *see* **u. minero** (3); (5) **cuartos**, Ant. Col. overtime, each **cuarto** (which may be a few hours' work only) being paid for at the rate of half a day's wages (journal).

**CUARTÓN**, (1) a large joist or girder, *see* **viga**; in Madrid, Sp. a beam 16 feet long, 9 inches wide and 7 inches thick; in Pachuca, Mex. 22 feet long, 18 inches wide, and 1½ to 4 inches thick [*see* **u. partido** (4)]; in Ant. Col. squared timber 3 inches by 3 inches; (2) **cuartones**, Mex. a quarryman's term for the many-sided pieces of volcanic rock (Bárcena); (3) **cuartones**, Mex. divisional planes or joints in rocks, *see* **juntura** (2).

**CUARZO**, quartz, *syn.* Mex. **guija** (2); **c. ahumado**, smoky quartz; **c. citrino**, occidental topaz; **c. ferruginoso**, ferruginous quartz; **c. hialino**, *see* **crystal de roca**; **c. hialino verde**, sinople; **c. lechoso**, milky quartz; **c. macho**, Col. quartz of bad appearance, generally sterile; **c. porfídico**, Peru, hornstone (Dwight) (**pedra córnea**); **c. radiado**, cross-course spar; **c. rosado**, rose quartz; **c. tabular**, laminar quartz, the plates of which are generally separated by material from the walls (Gamboa); *see* **ágata**, **alabandina**, **amatista**, **cacó**, **calcedonia**, **u. cariado**, **da**, **carrascal**, **cascajo** (8), **chichicle**, **u. corneo**, **ea**, **crystalillo** (1), **diente**, **ezteri**, **u. guija** (2), **guijarro** (2), **listado**, **lizote**, **jacinto** (3).

mulata, nicle, ojo (3), panal de rosa, pedernal (1), pórfido (2), prasio, rayado (2), resinita (2), risco (2), roca (1) and (2), rubí (3), sardio, sardónico, teguilote (1), topacio (2), venturina, zafrita.

**CUARZOSO**, SA, adj. quartzose.

**CUBA** (cask), (1) mech. prep. keeve, (Cornw. kieve) or vat, *see u. tina* (1); (2) hoist. kibble, *see cubilete*, tonel (2); (3) c. de amalgama, met. amalgamation barrel; (4) met. shaft, fire-room or tunnel of a blast- or shaft-furnace, *syn. laboratorio*, vaso (3), *see arbolillo*, costero (2), ojo (11), pecho (1), plaza (2), tramera; horno de c., shaft-furnace (often = blast-furnace); (5) met. fire-room of a coke-oven, etc.

**CUBERTURA**, roof, *see techo*.

**CUBETA** (small barrel or cask), (1) mech. prep. "kieve" or vat, *see tina* (1); (2) bucket, *see cubo* (1); (3) c. chata, hydr. bucket (Ponce de León), *see paleta* (3).

**CUBIERTA** (covering), (1) mech. casing; c. de cilindro, cylinder casing, steam-jacket, *see u. camisa* (1); (2) met. outer lining of a furnace [horno (2)]; (3) hoist. bonnet of a safety-cage [jaula (2)], *see gorra* (2); (4) alluv. m. overburden, *see montera* (3).

**CUBILETE**, Cartagena, Sp. hoist. kind of short kibble ("forma de media cuba") (Moncada).

**CUBILOTE**, cupola smelting-furnace; smelting-pot, *see u. horno* (2).

**CUBO**, (1) Mex. leather or other bucket (Lyon), *see achicador*, balde, calesa, cubeta (2), timba (2); (2) kibble, *see tonel* (2). NOTE.—The term is sometimes applied to a skip [chalupa (1)] or even safety-cage [jaula (2)]. (3) Nave or hub of a cart-wheel; boss or nave of a car-wheel; cast-iron boss or centre of a pulley, etc.; (4) socket of a candlestick [candelero (1)]; mech. coupling, socket, shaft-case (Ponce de León), *see candelero* (2), encaje (2); (5) among masons, a hodful of mixed mortar (Velázquez); (6) mill-pond, *see estanque* (1).

**CUBREJUNTA**, mech. joint-coverer, *e.g.*, a collar (collar).

**CUBRIR** (to cover), (1) c. el fuego, to bank up a fire; (2) to roof a building; c. de pizarras, to slate; (3) c. la cuenta, com. to balance an account.

**CUCHARA** (spoon), (1) c. de cuerno, Mex. in the patio process, a small horn bowl in which the earth of tortas is washed to test the process of amalgamation (Lyon), *see u. planillero*; c. de cacho, Col. is similarly made of horn, cut near the base, and polished on both sides, *syn. Chile* and Arg. poruña (a bull's horn cut in two); (2) bor. auger, *see u. trépano*; (3) Mex. turf-cutter, a gran cuchara has two wings, and can cut 3 or 4 puntas (4), or 0.9 to 1.2 m. in height at a time, *see pala* (2); (4) blast. scraper, *syn. cucharilla*, sacabarro; (5) hollowed spoon-shaped float of a wheel that drives an arrastre (3) or tahona; ladle-board of a water-wheel; (6) mas. trowel; (7) c. de draga, dredging-spoon.

**CUCHARETA** (small spoon), bor. boring-bit, *see bisel* (2).

**CUCHARILLA** (little spoon), c. de barrenero, blast. scraper, *see cuchara* (4).

**CUCHILLA** (knife), S. Am. (1) a range of mountains less voluminous than a *cordillera*, with steeper sides, and narrow along the top; (2) the steep side of a hill or mountain, especially when it forms a narrow ridge or knife-edge.

**CUCHILLO**, assemblage of pieces of wood or iron, which, fixed vertically over supports, sustains the roof of a building, or floor of a bridge (Acad.); *armadura en c.*, timb. *see* Fig. 9, *u.* *armadura* (1); *c. invertido*, *see* Fig. 36; *see* Fig. 3.

**CUCOS**, nickname given in Castile to the stone-cutters who come from Asturias.

**CUCUIZA**, Am. thread of the agave (Velázquez), *see* *pita* (2).

**CUCURUCHO** (cornucopia), Mex. leather cover to protect miners at work from falling water or rocks (Dwight).



FIG. 36.

Cuchillo invertido.

**CUELE** (from *colar*, to strain, to pass through a narrow place), Mex. (1) the driving of galleries, etc.; *dar cuele*, to drive, *see* *avanzar*; (2) *de cuele*, the distance driven, measured along the bottom of a gallery, drift or level, *see* *rasgo*; (3) bottom of a shaft (S. Ramirez), *see* *fondo* (3).

**CUELGA**, *c. de una corriente*, Ant. Col. the unevenness, fall or inclination of a stream.

**CUELLO** (neck), (1) *trabajo á c. torcido*, c.m. undercutting, lying on the side (Fr. *travail á col tordu*); (2) neck or journal of a shaft, *see* *luchadero*; (3) *c. de un riel* (2), or *del carril* (3), rib of a rail, web (Ponce de León); (4) flange, *see* *reborde*.

**CUENCA** (wooden bowl), (1) basin of a river; (2) top. territory surrounded by heights or mountains; (3) geol. basin or trough; *c. carbonífera*, coal-basin, *see also u. hoya* (2), *hoyada* (1); (4) mech. socket, *see* *candelero* (2).

**CUENTA**, (1) account; (2) *see u. tequio* (2); (3) a lenticular mass of ore, *see* *lenteja*; (4) *rueda de c.*, pulley, *see* *polea*, *u.* *rueda* (1).

**CUENTO**, prop, support, *see* *puntal* (1).

**CUERDA**, (1) cord or small rope, *syn.* *cabo* (2); *c. acalabrotada*, *see u. esparto*; *c. de alambre* (or *cable de alambre*) *de acero*, steel wire-rope; *c. de alambre de hierro*, iron wire-rope; *see* *abacá* (3), *cable* (1), *cabulla* (3), *cañamo*, *cordel* (1), *cordón* (1), *esparto*, *hebra* (1), *lia*, *maroma*, *pita* (2), *reatas*, *reatilla*, *u.* *saco* (1), *soga*, *u.* *trecho*; (2) *c. métrica*, measuring-tape, *see* *cinta* (1); (3) Mex. limits of a mining property (Dwight); (4) Mex. row of men who pass blocks of ore, etc., from hand to hand, *comp.* *trecheo*; (5) cord of firewood, *syn.* *montón* (4) *de leña*, *see* *cárcel* (5), *u.* *tarea* (3), *comp.* *estéreo*, *mecate* (2); in Col. = 128 cubic feet or  $4\frac{1}{2}$  burros (5); (6) blast. match, *see* *mecha* (1); *c. mecha*, slow match; (7) geom. chord; (8) conspicuous summit (*cima aparente*) of mountains (Acad.).



**CUERNO** (horn), (1) *cuchara de c.*, *see* *cuchara* (1); (2) *cuernos*, pump. catches, catch-pieces or wings, *syn.* *paracaídas* (2), *topes* (4), equiv. Fr. *parachutes*, Ger. *Fangfröschen*.

**CUERO** (Port. *coiro*, *couro*), (1) hide, generally of oxen, cows, etc.; *c. al pelo*, *c. crudo*, raw hide, *syn.* *piel* (1); (2) leather; *c. adobado*, dressed hide, *syn.* *piel* (2); *c. cocido*, waxed leather; *c. curado*, cured hide; *c. curtido*, tanned hide; *c. de suela*, sole leather; *c. verde*, rough leather; *medio cocido* (Ant. Col.), half-tanned leather; *medios cueros*, sides; *vaqueta*, sole-leather, tanned cow-hide [*curtido* (1)]; (3) Mex. leather bucket (Dwight), *see* *émbolo* (3).

**CUERPO** (body), (1) Mex. in the *patio* process, a wedge-shaped mass of hard amalgam formed in a mould preparatory to burning—a pile of *cuerpos* forms a *piña* (Lyon), *see* *amalgama*, *bollos* (1); (2) Mex. globule of mercury, *see u. calentar*; in the *patio* process, the *torta* is said to proceed *en el cuerpo*, when silver amalgam does not appear in the *ceja* (1); (3) *see torta*; (4) Mex. the lode mass or filling, *see* *relleno* (4); (5) *c. de filón*, *c. de veta*, Mex. a branch, forming a portion of the main body or mass of a lode, thus in Guanajuato the *veta madre* is said to be divided in places into three bodies (*cuerpos*) or branches [*ramales* (3), or *encajes* (4)], which, according to their relative positions, are known as *c. del alto* (hanging-wall branch), *c. del enmedio* (centre branch), and *c. del bajo* (foot-wall branch), *see* *ramal* (3); (6) Peru, ore-body (Dwight), *see* *clavo* (2); (7) a stockwork, *see* *cúmulo*; (8) *c. de bomba*, pump. barrel of a pump, working-barrel, *syn.* *cañon* (4) *de corrida*, *see u. bomba* (1); (9) *c. de polea*, hoist. pulley-frame, *see* *horca* (1); (10) *c. de mineros*, personnel of a mine, *syn.* *ensamble de mineros*.

**CUESCO**, (1) *see u. almendrilla* (1); (2) Mex. coarse ore (Dwight).

**CUESTA**, (1) hill, mount, *see* *cerro* (1); any ground rising with a slope, *syn.* *costanera* (1); (2) slope, gradient, *see* *pendiente* (2).

**CUEVA**, (1) cave, grotto (*gruta*), a subterraneous cavity, *syn.* *bóveda* (1), *caverna* (1), *socavón* (3), equiv. Port. *antro*, *buraco*; in Zavala, Catorce, S. L. Potosí, Mex. some caves, filled with earth, yielded two large bonanzas, paying at the rate of 1 *peso* the pound weight, and producing more than \$7,000,000 of silver (A. del M. de F.); *see* *cenote*, *covacha*, *resumidero*, *salón* (1), *tiales*, *comp. u. saco* (2); (2) *Huelva*, Sp. old Roman shafts and headings, sometimes full of water and running sand or mud (D. Tyzack), *comp. hoyo* (1); (3) *mina de c.*, Ant. Col. alluv. m. pay-dirt [*cinta* (3)] covered by large blocks of granite [*mani* (1)], making its extraction very laborious; (4) *c. vieja*, salt mine of Minglanilla, Sp. a huge chamber, measuring 334 m. by 50 m. and 62 m. high (Molina), *syn.* *el charco*.

**CUI**, Fr. Guiana, hemispherical vessel made of tin-plate, used in draining placers, etc. (L. Levat).

**CULATA**, (1) lower end of a cylinder [*cilindro* (3)], etc., back part of anything, *comp. culo*; (2) forebreast or end of a level, *see* *frontón* (1);

- (3) timb. lower end or foot of a stull (*estemple*), the upper end = *cabeza* (1).
- CULO**, blast. lower or inner part of a drill-hole [*barreno* (1)], *comp. culata* (1).
- CUMBRE**, top or summit of a mountain or hill, *see cima*.
- CUMBRERA**, (1) b. constr. ridge-pole, tie-beam, *syn. hilera* (3), *see u. tirante* (2); (2) Cadiz, Sp. and Canaries, piece of wood 24 or more feet long, and 10 inches by 9 inches section (*Acad.*), *see viga*; (3) timb., *see Fig. 49 c, u. riostra* (3); (4) timb. cap-piece, *see capa* (4).
- CUMULADOR**, *see acumulador*.
- CÚMULO** (heap), (1) an irregular deposit or mass, *see masa* (3); (2) a stockwork (Ger. *Stockwerk*), *syn. cuerpo* (7), *masa* (4) *entrelazada*, *montón* (4) *entrelazado*, *rebosadero* (5), *red de vetas*, *venas* or *cruza-dillas reticuladas*, *see u. bolsada* (3).
- CUNA**, cradle used in gold-washing.
- CUÑA** (Port. *cunha*), (1) wedge or gad, *syn. calce* (3), Peru, *famulia* (Dwight); c. *hidráulica*, hydraulic wedge; c. *con agujas*, plug and feathers, *see aguja* (7); *cuñas de apeo* (3), tubbing wedges, *see encubado*; c. *de empalme*, cotter, *see clavija* (1); *comp. lengüeta* (2), *piquete* (2), *puntero* (2), *punterola*, *punzón* (3), *tajadera* (3); (2) "horse" of ground, *see caballo* (5); (3) *cuñas*, Ant. Col. pillars left in stopes for supporting the main levels, etc., *see contrafuerte* (2).
- CUNEIFORME**, cuneiform, in the form of a wedge, *see u. filón* (1).
- CUNETA**, (1) a small trench, *see zanja* (1); (2) the drain or gutter of an adit-level or gangway, *syn. cañería*, *desaguadero*, equiv. Fr. *canal* or *rigole d'écouler*, Ger. *Quäle*, *Quele*, *Sohlenritz*, *Wasserseige*, *see charquero*, *comp. agojia*, *zanja* (1).
- CUÑO**, mark put on silver, *see marca* (1).
- CUPANO**, Phil. a large tree used for building, the bark yields a dye-stuff (*Velázquez*).
- CÚPULA**, **CÚPOLA**, dome, roof, *see cielo* (1), *dombo*; cap or dome of a reverberatory furnace, steam dome of a boiler, etc., *syn. caja* (24) *de vapor*, *dombo*, *domo*.
- CURADOR**, (1) overseer, *see sobrestante*; (2) guardian, trustee, *see tenedor* (1); (3) curator, administrator, *see administrador* (2).
- CURI**, Ecuador, gold, hence *Curaráy* river, *see oro*.
- CURSO**, (1) mech. travel, stroke or sweep, *see carrera* (5); (2) stream, current, *see arroyo* (1); (3) c. *de un río*, course of a river; (4) c. *de cambio* (3), course or rate of exchange.
- CURTIDO**, (1) *see u. cuero*; (2) Mex. a variety of the *patio* process, in which the mercury is added some days after the salt and *magistral*; it is now abandoned, *comp. curtir*.
- CURTIR** (to harden), Mex. in the *patio* process, to add copper precipitate (formerly lime) to the *torta* when it is hot (*caliente*), and *magistral* when it is cold (*frío*), *see u. torta*, *comp. curtido*.
- CÚSPIDE**, sharp-pointed summit of a mountain or *cerro*, *see cima*.

**CYCLOGENO**, circulating apparatus used in Paccard's method of extracting salt, *see* **calorífero**.

**CH.** Words with this letter will be found arranged alphabetically under **C**.

**DACITA**, dacite, *see u. mocheta*.

**DADO**, (1) mech. prep. die of a stamp-mill (bocarte), *syn. almadaneta* (2), chapa (3), Ant. Col. plan (7); (2) stone on which a horse-whim [malacate (1)] works; *see u. terraja*.

**DAMA**, met. dam or stone at the end of the fire-hearth of a blast-furnace, *see* **horno** (3).

**DAR**, to give; d. bocazo, *see* **bocazo**; d. cañonazo, *see* **cañonazo**; d. cuele, *see* **avanzar**, *u. cuele*; d. fuego, (1) blast. *see* **tirar** (1); met. to blow in (a furnace), *see u. calentar*; d. mechazo, *see* **mechazo**; d. taco, *see* **tirar** (1).

**DARDO**, jet of air, etc.

**DATA**, (1) an aperture or orifice in reservoirs in order to let out a definite quantity (Velázquez); (2) Braz. a mining claim about 169½ acres in extent, *see* **pertenencia**. In the eighteenth century 80 × 40 Portuguese yards; one **data**, was assigned to discoverer, one to crown, one to mine governor, and the rest distributed by lots (H. K. Scott).

**DATO**, surv. datum.

**DÉBIL**, adj. weak, Mex. a term applied to amalgam (amalgama) when very fluid, *comp. u. fuerte*.

**DECLINACIÓN**, surv. declination; d. de la aguja (3) or magnética, angle made by the magnetic meridian with the true north.

**DECLIVE**, (1) inclination, slope, *see* **pendiente**; (2) rail. gradient, grade, *see* **pendiente** (2).

**DECRETO**, judicial decree.

**DEDO**, the twelfth part of a palm (**palmo**) or the twenty-eighth part of a Spanish yard [**vara** (1)] = 18 mm.

**DEJAR RESPALDO**, Peru, to leave valuable ore in the wall-rock (Dwight).

**DELANTAL**, leather apron worn by miners, *syn. devantal*, *see u. vestido*.

**DELANTERA**, met. front of a furnace [**horno** (2)], etc., *see u. testera* (7).

**DELEGACIÓN**, *see* **diputación**.

**DELEZNABLE**, adj. brittle, fragile (of ores or ore-deposits).

**DEMA**, Ant. Col. (1) alluv. m. the side of a ground-sluice [**canalón** (2)], leat (acequia), etc. (2) timb. lagging, *see* **ademe**, **revestimiento** (1); (3) a dry-stone wall, *syn. mampostería* (2) **seca**.

**DEMAR**, *see* **ademar**.

**DEMÁSÍA** (excess), Mex. a fractional portion of ground left between two claims not large enough to admit of a separate denouncement (*i.e.*, less than a **pertenencia** in extent); gore (R. E. Chism), *syn. hueco* (3), equiv. to the **Oberschar** or **Ueberschaar** of the Germans.

**DENTE**, Port. tooth, *see* **diente**.

**DENUDACIÓN**, geol. denudation or erosion, *see* **erosión**.



**DENUNCIACIÓN**, *see* **denuncio**.

**DENUNCIADOR**, Mex. denouncer of a mine, *see* **denunciante**, *u.* **denuncio**.

**DENUNCIANTE**, Col. denouncer of a claim or mine, claimant, *see* **denunciador**.

**DENUNCIAR**, to denounce, under the old mining code of Mexico, implied that process by which a legal right of possession was obtained to a particular portion of any vein, worked or unworked, known or unknown, which a miner chose to select for his operations (Ward, 1827); under the new code the term is no longer in legal use, although still employed colloquially, *syn.* **solicitar una concesión, poner un registro**; S. Am. to denounce a claim or mine (still in use in many parts).

**DENUNCIO** (or **denuncia**), denouncement of a claim (**pertenencia**) before the proper authorities, in order to have it adjudged to the applicant. A person has the power of denouncing a claim which has been abandoned, or which has never been previously denounced. In Mexico formerly its depopulation (**despoblada**) for more than four months was sufficient ground for its re-denouncement, but by the new code the non-payment of the tax constitutes the only cause; *comp.* **pedimento**.

**DEPARTAMENTO**, department, a province, district, or subdivision of country.

**DEPENDIENTE**, Mex. inferior officer or clerk (Lyon).

**DEPÓSITO**, (1) geol. deposit, generally sedimentary; **d. de minerales**, mineral deposit; **d. de metal**, ore deposit, *syn.* Peru, **acomodana**; (2) pump. cistern or (U.S.A.) tank, *see u.* **estanque** (3); **d. para agua**, *see* **caja** (2); (3) **d. de aguas**, pond or reservoir, *see* **estanque** (1); (4) **depósitos**, Mex. water collected in old workings, *syn.* **baños** (3); (5) Mex. ore-bin, *syn.* Sp. **cancha** (1); (6) large storeroom or warehouse, *see* **almacén** (1); (7) **d. de aire**, pump. air-vessel, *syn.* Mex. **campana** (2); (8) **en depósito**, com. in bond; (9) chem. deposit; precipitate; (10) **d. de colada**, met. deposit for molten metal, etc., after tapping, *see* **colada, reposador** (2).

**DEPRECIACIÓN**, depreciation, decrease in price or value.

**DEPRESIÓN**, vent. depression, diminution of pressure or water-gauge, *syn.* **carga motriz**.

**DEPRIMÓGENOS** (Fr. **déprimogènes** of Murgue), centrifugal ventilators, or those which, putting into rapid rotary movement the molecules of air from a mine, utilise the centrifugal force so generated by throwing such air outside the mine, *e.g.*, fans of Guibal, Kley, Schiele, Waddle, Pelzer, Moritz, Geisler and Ratteau; they are divided into two classes—(a) **ventiladores centrífugos cilíndricos**, or those in which the pallets are in meridian planes, and (b) **ventiladores centrífugos cónicos**, those with pallets oblique to those planes (Molina), *comp.* **volumógenos**.

**DERECHO, HA**, adj., straight; **pie derecho**, timb. leg-piece, *see* **peón** (3).

**DERECHO**, (1) law, equity; **d. civil** or **común**, the civil (Roman) law; (2) **derechos**, taxes, dues, customs; in Mexico the duties formerly payable on silver were the **quinto** (in 1716 reduced to a tenth—**diezmo**),

the d. del uno por ciento, the derechos de monedage y señoraje, and, if gold was combined with the silver, the derechos de la casa del apartado, but in 1822 the d. de bocado, the uno por ciento, the señoraje and the quinto were abolished, in lieu of which a duty of 3 per cent. on the real value of gold and silver raised was substituted (H. G. Ward). At present in Mexico "the taxes on ores of gold or silver comprise 2·6 per cent. of gross value as State and Federal extraction-tax [derechos de fundición y ensaye], plus 4·5 per cent. as mintage-tax [derechos de acuñación], or in all, 7·1 per cent. on the gross assay value, to which must be added the stamp-tax on the factura of 0·6 per cent. on the net value" (N. H. Emmons).

In Colombia derechos are fees paid to Government officials and experts (peritos) for giving possession of a mine, granting titles, etc.; the Government taxes on the mines are called impuestos or derechos de estaca, *see* estaca (3).

In Chile, derechos are tributary dues paid to the mine owners, amounting to 15 to 30 per cent. of the net value of the mineral or metal raised.

Derechos de aduana (Port. direitos de alfandega), customs, customs duties; derechos de importación, import duties. *See* carga (5), cobos, gabela, impuestos, marca (1), u. mazamorero, patente, saca (1), señorial, tequio (1), veinteno, *comp.* derrama; (3) timb. leg-piece (pie derecho), *see* peón (4).

**DERRAMA**, assessment of a tax [derecho (2)], duty, or impost (Velázquez).

**DERRAME**, (1) leakage, waste waters, *see* apurador (1); (2) declivity, *see* pendiente (1); (3) subdivision of a ravine [barranca (2)] or valley in narrow outlets (Velázquez); (4) d. de veta, Ant. Col. shoad-stones, *see* riego (3); (5) geol. sheet of volcanic rock.

**DERRIBAR**, to break ground, *see* arrancar.

**DERRIBO**, breaking ground, *see* arranque (1).

**DERROCADO**, Mex. a mine is said to be derrocado (derrocar, obs. to tumble), when the workings have fallen in, *comp.* derrumbe (1).

**DERRUBIAR**, to gradually wear away or undermine the banks (of a river, stream, etc.), *see* carcomar.

**DERRUBIO**, the loose earth or alluvium resulting from the gradual wearing away of the banks of a river, *comp.* rumbón (3).

**DERRUMBABLE**, *see* sollamadizo.

**DERRUMBADERO**, (1) precipice, *see* precipicio; (2) *see* derrumbe (2).

**DERRUMBAMIENTO**, *see* derrumbe.

**DERRUMBAR**, (1) to sink or tumble down (of buildings); (2) to cave in (of mines or mine-workings), *see* derrumbe (1).

**DERRUMBE**, **DERRUMBAMIENTO**, (1) a "cave" or "run," *syn.* Mex. chiflón (5), desmoronamiento, hundido, equiv. Fr. éboulement, effrondement, Ger. Einsturz, Zusammenbruch, *see* caídos, u. chimenea (6), derrocado, u. desplome, hundimiento, sentazón, socarras; (2) landslide or landslip, *syn.* caída (5), corrimiento de tierra, Ant. Col. derrumbo

- or derrumbadero (2), Mex. desliz (2), desprendimiento (1), Santander, Sp. fana, freita, Mex. reliz (2), Ant. Col. volcán (2), equiv. Fr. éboulement de terre, Ger. Erdsturz, Bergsturz, *see* desvolcanarse, *comp.* venido.
- DERRUMBO**, (1) Ant. Col. landslide, *see* derrumbe (2); (2) Peru, a small narrow mountain pass (Tschudi), *see* paso (4).
- DESAGOTAR**, *see* desaguar.
- DESAGREGADO**, DA, adj. fine, disintegrated (Ponce de León).
- DESAGUADERO** (Port. *desaguadeiro*), drain or drainage-gutter of an adit or gallery, *see* cuneta (2); any small channel or drain, *see* tijera (3).
- DESAGUADOR**, a water-pipe, channel or conduit for water, *see* u. caz.
- DESAGUAR**, (1) to drain, pump or unwater, *syn.* desagotar, desaguar, desangrar, sangrar (1); d. una mina, to drain a mine, *see also* agotar (2), colar (3), extraer (2), sacar (2); (2) to empty or flow into the sea (of rivers), *syn.* desembocar, vaciar (3), *see* entrar.
- DESAGUAZAR**, to drain the water from any part, *see* desaguar (1).
- DESAGÜE**, (1) channel, drain, outlet; water-pipes in general, *see* tubería; (2) drainage, mine drainage; d. artificial, artificial drainage (by machines); d. natural, natural drainage (by means of levels, etc.), *see* achichar, atecas, bomba (1), chicar, ziquitumba.
- DESAHOGO**, *see* u. válvula.
- DESAJUSTE**, disagreement, breaking of a contract (Velázquez).
- DESAMPARAR**, to abandon (a mine), *see* abandonar, u. despueblo.
- DESAMPARO**, abandonment (of a mine), *see* abandono.
- DESANCHAR**, (1) d. la veta, Mex. to take down the soft wall of a vein and leave the lode standing for subsequent extraction, similar to U.S.A. gouging, *syn.* despejar, *comp.* circa, corte (6), ensanchar, llauca; (2) c.m. to undercut, *see* entaller, socavar.
- DESANCHE**, (1) the gouging of a vein, *see* desanchar (1); (2) c.m. undercutting, *see* regadura (1).
- DESANGRAR**, to drain, *see* desaguar (1).
- DESAPODERAR**, to repeal or revoke a power of attorney [poder (1)].
- DESARENAR** (to take away sand); Ant. Col. in minas de saca, to break up and carry away by water (batir) the poor alluvium (arenas frías), utilising tonga (Uribe).
- DESARROLLO**, development.
- DESATACADOR**, blast. pricker, *comp.* aguja (4).
- DESATERRAR**, Mex. to clear out the rubbish or deads, *see* limpiar (3).
- DESATIBAR**, *see* desatorar.
- DESATIERRE**, Mex. (1) the clearing out of the rubbish or deads (atierres) from workings, *see* limpia (1); (2) waste dump (Acad.), *see* vaciadero.
- DESATORAR**, to clear away the rubbish from any mine-working, *syn.* desatibar, descombrar.
- DESATORNILLADOR**, *see* destornillador.
- DESAVENENCIA**, disagreement.



- DESAZOGADERA**, S. Am. receptacle for the condensed quicksilver resulting from retorting.
- DESAZUFRRAR**, to desulphurise.
- DESBARRANCARSE**, Ant. Col. to be damaged or destroyed.
- DESBASTAR**, (1) to plane boards ; (2) to trim stones.
- DESBASTE**, (1) planing boards ; (2) trimming stones.
- DESBOCARSE EL BARRENO**, (1) Peru, blast. to remain (as a drill-hole) practically intact after firing (Dwight), *comp.* bocazo.
- DESBORDAR**, Mex. to stope underhand, *see* rebajar ; (2) to rob mine pillars (Dwight), *see* despilar.
- DESBORDE**, Mex. underhand stope, *see u.* grada (2).
- DESCALCE**, **DESCALZAMIENTO**, **DESCALZADURA** (1), quarr. undercutting, *see* regadura ; making vertical cuts or "cutting ends" (Fr. rouillures) ; (2) mech. unwedging (Ponce de León) ; (3) eng. undermining (Ponce de León).
- DESCALZADOR**, mas. crowbar, *see* barra (1).
- DESCALZADORA**, undercutting machine.
- DESCALZADURA**, **DESCALZAMIENTO**, *see* descalce.
- DESCALZAR**, (1) to undercut, *see* socavar ; (2) mech. to unwedge ; (3) eng. to bare the foundation, to undermine (Ponce de León).
- DESCANSILLO**, *see* descanso (2).
- DESCANSO**, (1) Mex. collar or bunding of a ladder-way in a climbing shaft, *syn.* tapextle (3), *see* boquete (3), *comp.* carnada (3) ; (2) the platform of a man-engine, *syn.* balconcillo, descansillo ; (3) timb. a bearer, *see* traviesa (4) ; (4) d. móvil, a cradle, scaffold or stage used in walling coal-pits or shafts, *see* andamio, patilla (1), plataforma (2), tablero (3), *comp.* balsa (1) ; (5) día de d., Mex. in the patio process, the day on which the tortas are left to rest (G. F. Lyon) ; (6) mech. rest, support.
- DESCANTEAR**, to smooth angles or corners ; quarr. to chamfer (Ponce de León).
- DESCAPOTAR**, Ant. Col., to clear away a thin layer of earth [capote (2)] in order to construct a ditch, or make a barredura (1) (Uribe).
- DESCARGA**, **DESCARGUE**, (1) d. de aduana, com. clearance at the custom-house ; *see* despacho (1) ; (2) unloading a ship ; (3) gold-mill. discharge, altura de la d., height or depth of discharge ; pump. discharge, *see u.* válvula ; hydr. delivery, discharge, *see* caudal (1), corrimiento ; (4) Mex. the last cake of metal [plancha (1)] from the furnace, which is the largest one (Gamboa) [*comp.* calentadura (1)], hence (5) Mex. drawing off the last contents of the furnace, blowing out the furnace, *see u.* apagar, *comp.* calentadura (2) ; (6) Mex. open-cut, *see* tajo (2) ; (7) arco en d., *see u.* arco.
- DESCARGADERO**, wharf, unloading-place.
- DESCARGADOR**, unloader, lighterman.
- DESCARGADORA**, Mex. discharging-tank, from which the slimes are run off last (T. Egleston), *see u.* estanque (3).

**DESCARGAR**, (1) to unload a ship, etc. ; (2) to discharge, *see* **descarga** (3) ; (3) Ant. Col. to take away the stones and make the gold-bearing sands run, when they become much heaped up, making the operation of breaking up (**chocar**) the pay-dirt difficult (Uribe) ; (4) d. **un horno**, Mex. to tear down a furnace (Chism) ; (5) *see* **u. tentadura** (1).

**DESCARGUE**, *see* **descarga**.

**DESCARRILAMIENTO**, transp. derailment of cars.

**DESCARRILAR**, transp. to derail a train ; to run off the track.

**DESCENSO** (descent), subsidence, *see* **revenimiento**.

**DESCENSOR AUTOMÁTICO**, a method of loading ships by lowering and automatically turning over a wagon, box, etc. (Molina).

**DESCLAVADOR**, straight, wide and blunt chisel (**cincel**), nail-pull.

**DESCLAVAR**, to draw out nails, *see* **desenclavar**.

**DESCOGOLLAR**, Ant. Col. to take away the upper part (**cogollo**) of a vein.

**DESCOMBRAR**, to clear away rubbish, *syn.* **desescombrar**, *see* **limpiar** (3).

**DESCOSTRADORES**, men employed taking down any fragments which may remain after blasting (M. J. Gloss.)—from **descostrar**, to take off the crust.

**DESCUBRIDOR, RA**, adj., **mina descubridora**, the mine in which a vein has been discovered. Under the old **Ordenanzas**, the discoverer (**descubridor**) was entitled by law to two **pertenencias** if in a district already worked, and to three if in a new district (M. J. Gloss.), *see* **u. mina** (2), **medida**.

**DESCUBRIDOR**, discoverer, *see* **u. descubridor, ra**.

**DESEMBRIMIENTO**, discovery (of mines, etc.), *see* **hallazgo**.

**DESCUBRIR**, to discover (mines, etc.).

**DESCUENTO**, com. discount.

**DESECACIÓN**, desiccation or simple drying of ores and minerals, *comp.* **calcinación, tueste**.

**DESECHADEROS**, men who clear away attle or deads [**desechos** (3)], *see* **zafrero**.

**DESECHO** (refuse), (1) Mex. in the **patio** process, flouing of the mercury (**azogue**), *see* **lis, u. tentadura** (1) ; (2) **desechos**, Mex. mech. prep. residual ores or refuse after sorting, skimpings or toppings, tailings, *see* **cola** (7), **recortes** (6), *comp.* **macos** ; (3) rubbish from the mines, waste rock, attle or deads, *syn.* Mex. **atierres, ataques** (2), Peru, **bazofia**, Chile, **broza** (4), Mex. **cascajo** (10), Mex. and Chile, **desmontes** (6), **escombros** (2), **limpia** (2), **materias esteriles**, Ant. Co'. **ripios** (5), Huitzucó, Guerr. Mex. **tecoral**, Mex. **tepetate** (1), **terreros** (2), **tierras** (5), **zafra** (2), equiv. Fr. **déblais, décombres**, Ger. **Berge, taubes Gestein** ; when packed in a mine forms attle-packing, gob or goaf [**relleno** (3)], *see* **trincha** (2) ; (4) very low grade or poor ores, *syn.* Peru, **broza** (5), **desmontes** (5), *comp.* **despinta** (2), **u. despoblado, da** ; (5) met. lead dross ; assay waste (Dwight).

- DESEMBARCADERO**, (1) dock, quay, *see* muelle (3); (2) rail. platform, *syn.* andén (3), *see* muelle (4).
- DESEMBOCADERO**, **DESEMBOCADURA**, **DESEMBOQUE**, mouth of a river or canal, *syn.* boca (9), de río, embocadura, ría.
- DESEMBOCAR**, *see* desaguar (2).
- DESENCLAVAR**, *see* desclavar.
- DESENCIELAR**, Ant. Col. to extract the portion of a vein which remains between two adits (Uribe).
- DESENFANGAMIENTO**, mech. prep. cleansing from mud, a preliminary washing, *comp.* desenlodamiento.
- DESENFANGAR**, mech. prep. to cleanse ore from mud, *syn.* desfangar, deslamar (1), *comp.* desentarquinar.
- DESENGANCHAR**, to unhook, *see* desganchar.
- DESENGANCHE**, disconnection.
- DESENGRANAR**, mech. to throw out of gear, to uncouple; to get out of gear.
- DESENLODAMIENTO**, mech. prep. washing or cleaning of ore, a preliminary washing to get rid of clay, *syn.* deslodadura, *comp.* desenfangamiento.
- DESENLODAR**, mech. prep. to separate the clay from any mineral or ore, *syn.* deslodar, *see* desenlodamiento.
- DESENTARQUINADO**, mech. prep. trunking.
- DESENTARQUINAR**, to free a ditch or trench from mud, etc. (Velázquez), *comp.* desenfangar.
- DESFANGAR**, *see* desenfangar.
- DESFILADERO**, top. defile or narrow pass [paso (4)]; deep valley or gorge, *see* cañón (5).
- DESFUTAR**, *see* disfrutar.
- DESFUTE**, *see* disfrute.
- DESGANCHAR**, to unhook, *syn.* desenganchar; to unfasten (the kibble, etc.); to uncouple, to disconnect, *comp.* enganchar (1).
- DESGARRE**, rending or tearing (of the roof of a working, etc.), *syn.* cisallamiento (Molina).
- DESGASTE**, waste, wear and tear (Fr. *dégât*), *see* deterioro, gasto (5).
- DESGOTAR**, to drain off water, *see* agotar.
- DESGOZNAR**, to unhinge, disjoint.
- DESGRETE**, met. in cupellation, the separation and weighing of the two classes of litharge formed (green and yellow).
- DESGUACHAR**, Ant. Col. alluv. m. to take the small gravel out of the channel [principal (1)], *see* guache (2).
- DESIERTO**, TA, adj. *see* abandonado, da.
- DESIERTO**, desert, *see* despoblado (1), *traversías*.
- DESINTEGRADOR**, mech. prep. disintegrator.
- DESINTEGRAR**, mech. prep. to disintegrate.
- DESISTIMIENTO**, Mex. withdrawal of the application for a mining claim, etc.



- DESLAMAR**, (1) to clear of mud, *see* **desenfangar** (2) ; *see u.* **estanque** (3).
- DESLAVE**, tailings, *see* **cola** (7).
- DESLINDADOR**, surv. one who marks boundaries (**linderos**).
- DESLINDAMIENTO**, **DESLINDE**, act of making boundaries (**linderos**), demarcation.
- DESLINDAR**, surv. to mark boundaries (**linderos**).
- DESLINDE**, *see* **deslindamiento**.
- DESLIZ**, **DESLIZAMIENTO**, (1) geol. slip, slipping, *syn.* **escurrimiento** ; (2) Mex. landslip or landslide, *see* **derrumbe** (2) ; (3) Mex. in the patio process, when, through want of sulphate of copper, the mercury does not form a **lis** or **liz** (flouring).
- DESLIZARSE EL AZOGUE**, Peru, to flour (of mercury), *see* **lis**, **liz**.
- DESLODADURA**, *see* **desenlodamiento**.
- DESLODAR**, *see* **desenlodar**.
- DESLODAJE**, mech. prep. washing away the clay from any mineral or ore.
- DESMENUZABLE**, friable (as of ore).
- DESMONTAR**, (1) to fell or cut down wood ; (2) to clear away rubbish, *comp.* **limpiar** (3) ; (3) to clear the surface of the ground preparatory to making a road, etc. ; alluv. m. to remove the overburden [**montera** (3)], to strip ; (3) Ant. Col. alluv. m. when working overcast, to clear away the first beds by means of water, *see* **batir**.
- DESMONTE**, (1) felling timber ; (2) clearing the surface ; stripping, *see* **desmontar** (2) ; (3) **trabajar por d.**, Ant. Col. to exploit an alluvial mine by putting on water, in order to wash down the alluvium from the top ; (4) Ant. Col. alluv. m. the superficial layer above the pay-dirt, the overburden or cap, *see* **montera** (3) ; (5) breaking down ores, *see* **arranque** (1) ; (6) **desmontes**, Mex. poor ores, *see* **desecho** (4) (7) **desmontes**, attle or rubbish, *see* **desecho** (3) ; **metal en desmontes**, ore in the dump (*i.e.*, interspersed in the dump).
- DESMORONAMIENTO** (crumbling away), *see* **derrumbe** (1), **rumbón** (3).
- DESMORONOS**, Col. surface-damage, caused by working mines, for which the exploiter has to pay indemnification.
- DESNIVEL**, unevenness, inequality of the ground ; slope, gradient, *see* **pendiente** (2).
- DESNIVELADO**, **DA**, adj. sloping.
- DESNIVELAR**, to make uneven ; to unlevel.
- DESPACHADORES**, Mex. (1) men employed in filling the **mantas** (1) with ore, etc. (M. J. Gloss.) ; (2) two persons, seated at a table, with a book before them containing the names of all the **tenateros**. Two balances are suspended before them to weigh the loads if required. (Humboldt).
- DESPACHO**, (1) office or counting-house, *syn.* **oficina** (2) ; (2) shipment, *see* **embarque** ; (3) Mex. a plat, *see* **cóncavo** ; (4) commission, warrant

or patent, thus, in Mexico, the mining agents (*agentes de minería*) must have a *despacho* for this office ; (5) *d. de aduana*, clearance (at the custom-house), *see* *descarga* (1).

**DESPAJAR** (to winnow), Mex. to remove waste rock by concentration (Dwight), *see* *concentrar*.

**DESPAJE** (winnowing), Mex. concentration-tailings (Dwight), *see* *concentrados*.

**DESPEDIR**, to discharge or dismiss workmen, etc., *see* *bombear* (4).

**DESPEJAR LA VETA**, *see* *u. desanchar* (1).

**DESPEÑADERO** (Port. *despenhadeiro*), precipice, *see* *precipicio*.

**DESPENSA**, (1) storeroom for materials and tools, mercury and even bullion, *syn.* *almacén* (1), *see* *jacal* (1) ; (2) storeroom for provisions and meat ; (3) Mex. a room, well secured, for keeping rich ores, that for ordinary ores being known as *galera* (2) (Gamboa).

**DESPENSERO**, official in charge of the *despensa*.

**DESPERDICIOS**, waste, offal.

**DESPEZO**, diminution of one end of a tube or pipe.

**DESPILADO, DA**, pp. of *despilar* ; *mina despilada*, a mine robbed of its pillars ; an abandoned mine, *see* *u. abandonado, da, comer* (2).

**DESPILAR**, Mex. to take down or rob the pillars of a mine, *syn.* Mex. *desbordar* (2), *despilarar*, *see* *adelgazar* (2), *arrebañar, comer* (1).

**DESPILANAMIENTO**, the robbing of pillars. NOTE.—Some engineers use the word as equiv. to Fr. *dépilage*, *see* *u. arranque* (1).

**DESPILARAR**, *see* *despilar*.

**DESPINTA**, (1) Chile, silver ore assaying under 50 *diezmilésimos*, *comp.* *pinta* (3) ; (2) Arg. the poorest ore, containing much iron pyrites, etc. (Hoskold), *comp.* *desecho* (4).

**DESPLATACIÓN, DESPLATE**, met. desilverisation.

**DESPLATAR**, met. to desilverise.

**DESPLATE**, *see* *desplatación*.

**DESPLAZAMIENTO**, geol. displacement, *see* *salto* (1).

**DESPLOMAR**, to deviate from a perpendicular line, to sag (of a wall).

**DESPLOME**, bulging or sagging ; *sistema de d.*, Peru, old method of working by which the chambers got out of plumb, giving rise to caves, etc., *see* *derrumbe* (1).

**DESPLOMO**, the bulging or jutting out of a wall.

**DESPOBLACIÓN, DESPOBLADA**, depopulation, *see* *u. denuncia*.

**DESPOBLADO, DA**, adj. metal *despoblado*, Mex. ore with much gangue, *syn.* *despoblado*, *comp.* *desecho* (4) ; Huitzucó, Guerr. low grade or ordinary quicksilver ore, containing about 1 per cent. of mercury, *syn.* *metal ordinario* or *metal común*, *comp.* *granza* (4), *u.* *pepena* (1), *u.* *tierras* (4) ; *mina despoblada*, a mine with an insufficiency of workmen, *see* *despoblar*.

**DESPOBLADO**, (1) desert (*desierto*), an uninhabited place ; (2) *see* *u. despoblado, da*.

**DESPOBLAR**, *d. una mina*, Mex. to have a less number of workmen

- in a mine than that required by law (*i.e.*, under the Ordenanzas and old mining code, *but see u. denuncio*) ; to suspend work in a mine.
- DESPOJO**, d. de un filón, Ant. Col. the extraction of the ores from a vein (Uribe), *see* arranque (1).
- DESPRENDIMIENTO**, (1) landslip, landslide, *see* derrumbe (2) ; (2) tubo de d., condensing-tube of a retorting apparatus ; (3) d. de un gas, dispersion.
- DESPUEBLE**, Mex. the abandonment (*desamparar*) of a mine without doing any inside or outside work with the four workmen (*operarios*) which the Ordenanzas demand (Gamboa, 1761), *see* abandonar, *u. denuncio*.
- DESPUNTADOR**, Mex. (1) sorting hammer, *see* martillo ; (2) sorter, *see* apartador (1).
- DESTAJADOR**, a kind of smith's hammer (Velázquez), *see* martillo.
- DESTAJE**, *see* destajo.
- DESTAJERO**, DESTAJISTA, labourer working by the piece, bargain-taker, tutworkman, *see* destajo, *comp. campista*.
- DESTAJO**, DESTAJE, (1) job ; á destajo, by the job, by the lump, *see u. parada* (3) ; (2) undertaking the completion of a work within a certain time (Velázquez) ; undertaking any work at a fixed price ; piece or contract work at a certain amount for each yard, metre or fathom driven (*de cuele*), tutwork.
- DESTIERRE**, *see* limpia (1).
- DESTILAR**, to distil, *see* evaporar ; destilarse el mineral, to distil ore (of quicksilver).
- DESTORNILLADOR**, screw-driver, wrench, turnscrew, *syn. desatornillador*, volvedor (1).
- DESTORNILLAR**, to unscrew, *syn. desentornillar*.
- DESTRAL**, a small axe or hatchet, *see* hacha (1).
- DESTRANCAR**, Ant. Col. to remove obstacles which prevent the unwatering of mines (Uribe).
- DESVENAR**, to extract mineral from a vein or lode, *see* arrancar (1).
- DESVIACIÓN**, (1) variation of the magnetic needle ; (2) rail. shunt ; (3) *see* desvío (1).
- DESVIADERO**, railway switch, siding, side-track, passing-place, *see* desvío (2).
- DESVIADOR**, d. de las correas, mech. belt-shifter (Ponce de León).
- DESVIAR**, (1) rail. to switch, to shunt, *syn. Mex. enchuchar* ; (2) mech. to shift (belting, etc.).
- DESVÍO**, (1) a vein which, crossing another, follows the direction of the latter for a certain distance before resuming its normal direction, *syn. desviación* (3) ; (2) transp. a parting or junction of two roads, a siding, *syn. cambio* (2), cambio de vía, Cuba, chucho (2), desviadero, equiv. Fr. évitement, *see* apartadero ; if two roads part = bifurcación (Fr. bifurcation), if three roads part = trifurcación (Fr. trifurcation) ; (3) vent. separation of air-current (parting) by passing one above or below, or to the right or left of another.



- DESVOLCANARSE**, Ant. Col. to be covered by a landslide [*derrumbe* (2)]; to be damaged, ruined (Uribe).
- DESZAFRAR**, to carry away the waste [*zafre* (2)] from an excavation, *see limpiar* (3).
- DETECTOR** (from Engl.), fire-damp detector, etc.
- DETENER**, d. *la corriente*, el. to break current.
- DETERIORO**, deterioration, wear, use, wear and tear, *see desgaste*.
- DETRÍTICO**, CA, adj., composed of detritus; detrital.
- DETRITO**, geol. detritus, *syn. escombros* (3); d. *aluvial*, alluvial detritus.
- DEUDA**, debt; *deudas activas*, assets; *deudas pasivas*, liabilities.
- DEUDOR**, debtor.
- DEVANTAL**, *see delantal*.
- DEYECCIÓN**, geol. ejection (of volcanic material) (Acad.).
- DIABLO** (devil), (1) Mex. rail-bender (Dwight), *see gato* (3); (2) Mex. kind of barrow [*carreta* (2)] used for moving heavy weights (Dwight); (3) Col. lifting-jack or -screw, jack-screw, *see gato* (1); (4) d. *fuerte*, Libano, Tolima, Col. kind of hard wood used in mines (W. J. Pierce); other woods used are *dinde*, *diomate*.
- DIAGONAL**, Cartagena, Sp. and Ant. Col. backstay of a pulley-frame [*horca* (1)], *see u. barra* (9), *tornapunta* (3); any inclined stay or brace, *see gallo* (1).
- DIAMANTE**, diamond; d. *brillante*, brilliant; d. *bruto* or d. *en bruto*, rough diamond, *syn. naife*; d. *falso*, false diamond; d. *negro*, bort; d. *rebolludo*, rough diamond of a rounded form (Acad.); d. *rosa*, *rosa* (1), rose diamond; d. *tabla*, table diamond; d. *tallado*, cut diamond; *see carbonado*, *chatón*, *chispa* (2), *cincorá*, *fondo* (7); for minerals and rocks of diamond fields *see agulhas*, *barro* (4), *caldeirões*, *cascalho* (2), *favas*, *feijoes*, *formação* (2), *grupiaras*, *gurgulho*, *poção*.
- DIAMANTINO**, Guanajuato, Mex. veinstone formed of splintery hornstone and crystallised felspar (Dahlgren), *see matriz* (1).
- DIARIO**, (1) diary, a daily account; *libro d.*, com. diary; (2) Col. daily quantity of amalgam produced by a mill or mills; (3) Col. mill diary, including hours lost, tonnage of ore milled, etc.
- DIÁSPERO**, **DIASPRO**, name of some varieties of jasper, *see jaspe* (1).
- DIBUJO**, drawing, design, draft.
- DIENTE**, (1) mech. tooth or cog (Port. *dente de roda*); d. *de engranaje*, ratchet, *see u. fiador* (2); d. *de sierra* (Port. *dente de serra*), tooth of a saw; *dientes*, Mex. cogs on the large wheel which receive those on the smaller one, *syn. dientes de rueda*; (2) *dientes*, Col. teeth or cams on the axle [*principal* (2)], which raise the lifters [*aspas* (1)] of the native mill stamp-stem [*cabo* (5)], *comp. cama* (3); (3) d. *de perro* or *dienteperro*, Ant. Col. crystallised and opaque quartz (*cuarzo*) occurring in geodes (Angel); Uribe says it is imperfectly crystallised and has the aspect of a dog's tooth; (4) d. *de murciélago* (bat's tooth), Ant. Col. stibnite (*antimonio gris*) in cavities in veins (Angel); (5) *dientes*, projecting stones left to continue a wall, *syn. adarajas*, *see*

mechinales (1); (6) Mex. mas. bond, bond-stone (Dwight), *syn.* tizón.

**DIENTEPERRO**, *see* **diente** (3).

**DIEZMILÉSIMO** (DM.), Chile, 0·001 g. of metal in 10 g. of ore = 3·2666 ozs. per ton, used for silver ores; **cientmilésimo** (CM.), 0·0001 g. of metal in 10 g. of ore = 0·3266 oz. per ton, used for gold ores.

**DIEZMO**, tenth, *see u.* **derecho** (2).

**DIFERENCIA**, difference; **d. de latitud norte**, northing; **d. de latitud sur**, southing; **d. en longitud**, meridian distance; **d. en nivel**, fall, difference of level (Ponce de León).

**DIFUSIÓN**, *see* **dispersión**.

**DIFUSOR**, vent. a casing to a fan provided with from six to twelve orifices, having movable doors, the sum of whose areas is equal to the stack of Guibal's fan (invented by Harzé).

**DILATACIÓN**, dilatation, expansion (of rails, etc.).

**DILIGENCIA**, (1) return of a writ, judicial formalities, procedure; (2) **d. de posesión de minas**, Col. legal notice of the possession of a mine; (3) stage-coach.

**DILUIR**, to dilute.

**DILUVIO**, deluge, overflow, inundation, flood.

**DINAMITA**, dynamite; **dinamitagoma** or **gelatina explosiva**, blasting gelatine (86 per cent. nitro-glycerine, 10 per cent. cotton powder, and 4 per cent. of camphor).

**DÍNAMO**, el. dynamo.

**DINDE**, *see u.* **diablo** (4).

**DINERAL**, coin. standard for assayers, the **dineral** of gold is a weight of one **castellano**, divided into 24 **quilates** (carats), and each **quilate** into 4 **granos** (grains); the **dineral** of silver is a weight of one **marco**, divided into 12 **díneros**, and each **dínero** into 24 grains.

**DINERO**, (1) money, á d., al d., á d. seco, á. d. **contante** or **efectivo**, en d. **efectivo**, in cash; (2) standard of silver, the twelfth part of a **dineral**.

**DINTEL**, lintel of a door or window, *syn.* **cabecero**, **cabezal** (7), **cargadero** (2), **carguero** (3), *see* **chambrana** (3), *comp.* **jamba**.

**DIOMATE**, *see u.* **diablo** (4).

**DIONISIA**, (1) a black stone, stained with red spots, bloodstone (heliotrope, a var. of jasper), *see* **ezteri**, **jaspe** (1) **sanguinaria** (1); (2) a well-polished var. of hematite, *syn.* **hematites**, **sanguinaria** (2), *see* **albín**.

**DIORITA**, diorite; **d. compacta**, **aphanite**; **d. esquistosa**, greenstone slate (Ponce de León), *syn.* **Guadalcázar**, **S. L. Potosí**, **Mex. piedra mora**, **Col. sabanera**, *see* **piedra azul** (b), **u. roca** (3), **tosca** (1).

**DIPUTACIÓN DE MINERÍA**, Mex. a local board, formerly elected in each district for the administration of all matters relating to the mining industry, *see u.* **minería**, **tribunal**; abolished by the Law of 1892, and substituted by Agencies, *see* **agentes**; *syn.* **Peru, delegación de minería.** ]

**DIQUE**, (1) dike, dam, mole or mound to prevent inundations, *see* albarradón, chamburgo, *u.* trincho (2), virada ; (2) dam, mine-dam, *see* cerramiento, presa (1) ; d. lateral, wing of a dam ; (3) dock ; d. de construcción, or d. seco, dry dock ; (4) canal, thus in salinas of Torrevieja, Alicante, Sp. = a canal with two branches, the sides of which are walls of squared stone (sillería) ; on the banks are the eras or open deposits (Molina) ; (5) geol. dike, *syn.* filón (3) de roca, macho (9), *see* banco (5), chorro (3), *u.* roca (3), testera (1), toska (5).

**DIRECCIÓN**, (1) geol. strike, *see* rumbo (3) ; d. local, d. media, d. principal, local, average and chief strike, respectively ; (2) surv. azimuth (azimut).

**DIRECTOR**, director, manager or superintendent (superintendente) ; d. de la Casa de Moneda, Master of the Mint.

**DIRIGIRSE**, geol. to strike.

**DISCO**, (1) face of the sun or moon, disc ; (2) lens (of a telescope, etc.) ; (3) rail. semaphore ; (4) d. de cuero, leather washer, *see* empaquetadura, volandera (2).

**DISFRUTAR** (or desfrutar), to enjoy or have the benefit of a mine ; d. una mina, to work a mine, *see* trabajar ; d. de la veta, to exploit (explotar) or mine, *comp.* arrancar.

**DISFRUTE** (or desfrute), working or mining a vein or deposit, *syn.* rebajo (1), *comp.* arranque (1) ; obras de d., stopes, etc.

**DISLOCACIÓN** (Port. deslocação), fault, throw or slide ; d. ascendente, up-throw ; d. descendente, down-throw, *see* salto (1).

**DISLOCADOR, RA**, adj. veta dislocadora, a vein which passes through another, and heaves or throws it.

**DISLOCAR** (Port. deslocar), geol. to displace (of a fault), to fault.

**DISPARAR**, to blast or shoot, *see* tirar (1).

**DISPARO**, discharge, explosion, *see* tiro (6).

**DISPERSARSE**, to die out in the "country" (of veins).

**DISPERSIÓN**, d. de la capa (1), *see* Fig. 37, *syn.* borrasca (3), difusión or emborrascamiento de la capa (1).

**DISTRIBUCIÓN**, *see* *u.* aparato, válvula.

**DISTRIBUIDOR**, (1) mech. prep. distributor or head-board, *see* taco (10) ; (2) st. eng. slide-bolt, distributing regulator (Ponce de León) ; (3) mech. valve-chest, *see* *u.* caja (4) ; (4) hydr. m. distributor, *syn.* repartidora.

**DISTRITO**, district, *syn.* círculo (2), prov. coto (2), *see* marca (3), partido (1), real (1).

**DIVIDENDO**, dividend ; d. activo, dividend, profit ; d. pasivo, assessment (Ponce de León).

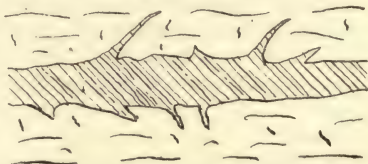


FIG. 37.—Dispersion de la capa (1)  
(after Moncada).



**DIVI-DIVI**, Venez. a plant extensively used in boilers as an anti-incrustation (G. P. Ashmore and C. Seale).

**DIVISIÓN**, (1) geol. joint, *see* **juntura** (2); (2) vent. bratticing, *see* **tabique** (3).

**DM.** = **diezmilésimos**.

**DOBLA**, Peru, night-shift, *see* **relevo**; Chile, a double shift, "una d. de 24 horas."

**DOBLAR** (to double), to work two shifts in succession, *see* **endoble**, **relevo**.

**DOBLE**, adj. double; d. **excéntrica**, st. eng. link motion; d. **vía**, rail, double track (Ponce de León).

**DOCIL**, adj. (1) docile (of ores), easily treated, free-milling; (2) malleable, ductile (of metals).

**DOCIMASIA**, **DOCIMÁSTICA**, the docimastic art, the art of assaying.

**DOCUMENTO**, document, voucher; d. **anexo**, schedule; d. **de venta**, bill of sale.

**DOLOMIA**, dolomite.

**DOMBO**, **DOMO**, dome, cupola; steam dome, *see* **cúpula**.

**DOÑAS**, a present made every year to the miners who work in the iron mines of Spain, *see* **gratificación**.

**DORADOS**, Michoacan, Mex. yellow copper ores or those in which copper pyrites predominate, *comp.* **aplomados**.

**DORMENTE**, Port. sleeper, *see* **durmiente** (1).

**DORMIENTE**, *see* **durmiente** (1).

**DORNAJO**, d. de los mineros, mech. prep. miner's trough (Venator), *see* **gamella** (2), **noque** (2).

**DOTACIÓN**, complement of a crew; number of horses or mules required in a day for working a horse-whim [**malacate** (1)], etc.

**DOVELA**, (1) any one of the arch-stones or voussoirs of an arch (**arco**); **ladrilla en forma de d.**, *see* Fig. 38; (2) the curved sides of an arch (**arco**), *see* **intradós** (1) and **trasdós** (1).

**DOVELAR**, to hew stones in curves for an arch, or arched dam.

**DRAGA**, (1) dredge, dredger, *syn.* **excavadora**; (2) bor. dredge used for withdrawing *débris* when boring shafts by Kind's method; (3) miner's shovel [**pala** (1)]; d. de **minador**, miner's drag, crooked shovel (Ponce de León).

**DRAGAR**, to dredge, *syn.* **excavar**.

**DRAGONERA**, Peru, met. passage of the flame into the furnace [**horno** (2)] at the fire-bridge (Dwight).

**DROMOGRAFO**, *see* **tachografo**.

**DRUSA**, druse, drusy cavity, (Derb.) lough, swallow, (Cornw.) vugh (vug), *syn.* **bolsa** (3), **bolsada** (2), **cavidad** (2), **geoda** (2), Col. **gongora**, **hueco** (2), Peru, **laque** (2), Mex. **soyote**, equi Braz. (Port.) **olho** (1),

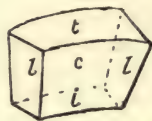


FIG. 38.

**Ladrilla en forma de dovela** (1) (after Ezquerro).

c, cara (5); l, lecho (6); i, intradós; t, trasdós.

- Minas Geraes, Braz. *panella*, Fr. *druse*, four, poche, Ger. *Erzdruse*, *Drusenraum*, *see cholla*, *comp. caverna* (2), *soplado*.
- DÚCTIL**, adj. ductile ; for *plata d.*, *see u. plata* (2).
- DUELA**, (1) stave of a barrel or cask, *syn. costilla* (1) ; (2) *see camón* (2) ; (3) stone of a floor or flooring-board (Dwight).
- DUEÑO**, (1) owner of a mine, *see propietario* ; (2) shipper of ore (Dwight).
- DUREZA**, hardness, solidity.
- DURMIENTE**, (1) transp. engine-bearer or sleeper, *syn. Ant. Col. polín* (2), *solera* (7), *trasversa*, *traviesa* (3), *travesaño* (3), *equiv. Port. dormente*, Minas Geraes, Braz. *salipa*, Fr. *traverse*, Ger. *Eisenbahnschwelle*, *comp. larguero* (5) ; (2) thick board, *see tablón* ; (3) d. de la caldera (2), bedding of a boiler ; (4) girder (Fr. *longrine*), stringer, *see viga* ; (5) Mex. timb. sole-piece, *see solera* (3).
- DURO, RA**, adj. hard ; for *piedra dura*, *see u. piedra*.
- DUROS**, (1) Asientos, Aguascalientes, Mex. hard copper ores in which quartz [almendrilla (2)] predominates in the matrix (Ramircz), *comp. lamosos* (1), *pastosos*, *yesosos* ; (2) met. badly calcined ores (Ponce de León).
- ÉBANO**, ebony-tree ; ebony wood.
- EBO**, Nicaragua, a tough, hard and oily wood, good for making charcoal (C. J. Mixer).
- ECHADERO**, Mex. a level place on the hill to load mules, to spread out ores, and to clean and weigh them (Gamboa), *syn. patio* (1), *comp. banqueo* (1).
- ECHADO, DA**, adj. *veta echada*, an inclined vein, *syn. veta recostada*, *comp. u. clavado, da*.
- ECHADO**, inclination or dip (of a deposit), *syn. buzamiento, hundimiento* (6), *inclinación* (1), Mex. *manteo* (2), *pendiente* (3), *recueste* or *recuesto* (2), *tendido* (2), *vertiente*, *equiv. Port. pendor*, Fr. *inclinaison*, *pendant*, *plongement*, Ger. *Einfallen*, *Fallwinkel*, *Neigung*, Ital. *pendenza* ; e. local, local dip ; e. media, average dip (Ger. *Generalfallen*) ; e. principal, principal dip.
- ECHAR**, (1) e. una *retreta*, Murcia, Almería, Jaén, Sp. to knock or give blows (of entombed miners) in order to attract attention (Molina) ; (2) e. *planilla* (3), Mex. to gob, pack or fill, *see rellenar* ; (3) e. *barro*, mas. to clay ; (4) e. *carbón*, st. eng. to coal.
- ECLÍMETRO**, surv. clinometer.
- ECLISA** (from Fr. *éclisse*), transp. fish-plate, *syn. barrote* (2), *brida* (2), *escarpa* (3), *mordaza* (3), *placa* (1) de *junta* or de *unión*, Mex. *planchuela*.
- EDIFICAR**, to build, *see construir*.
- EDUCCIÓN**, *see u. válvula*.
- EFFECTIVO**, cash ; e. en *caja*, cash in hand.
- EFFECTO**, (1) e. *útil*, mech. useful effect ; (2) *efectos*, assets ; effects, goods ; com. drafts or bills.

**EFLORESCENCIA**, (1) chem. efflorescence ; (2) Peru, outcrop (Dwight), *see* **afloramiento**.

**EGRENA**, an iron clamp, *see* **clama**, *comp.* **abrazadera** (1).

**EIXO**, *see* **eje**.

**EJE** (Port. **eixo**), (1) axis of a wheel or shaft ; axis of a stream, etc., *see* **centro** (3) ; axis of a gallery or shaft ; geol. axis of a fold, etc., *see* **cresta** (2) ; (2) axle, axle-tree, shaft or spindle, *syn.* **árbol** (3), **asta** (1), **biela** (4), **guijo** (2), *see* **buje**, **cabeza** (8), **gorrón** (1), **marrana**, **tachón** ; e. **acodado** or **acodillado**, mech. crank shaft (Fr. **arbre de couche**) ; e. **intermedio**, intermediate or counter-shaft (**contraeje**) ; e. **montado**, fixed axle (of a wagon) ; e. **motor** or e. **principal**, driving shaft, main shaft ; (3) **ejes de cobre**, Chile, met. copper matte (containing 40–60 per cent. copper), or double sulphides of copper and iron, *comp.* **barra** (3).

**ELECTRO**, (1) amber (Greek **elektron**), *syn.* **ámbar amarillo**, **cárabe** (Fr. **carabe**), **sucino**, or **succino** ; (2) electrum, a native alloy of gold and silver, *syn.* **oroche natural** ; (3) artificial alloy, containing four parts gold to one of silver.

**ELECTRODO**, el. electrode, *see* **anodo**, **catodo**.

**ELECTROIMÁN**, electro-magnet.

**ELEVACIÓN**, (1) elevation ; (2) rise, ascent, height ; (3) altitude.

**ELEVADOR**, (1) a pump on the pulsometer or injector principle, *see* **inyector** ; (2) hoist. cage, *see* **caja** (7) ; (3) lift or (U.S.A.) elevator, *see* **montacargas** ; (4) e. **hidráulico**, hydr. m. hydraulic elevator.

**ELEVADORA**, *see u.* **bomba** (1).

**ELEVAR**, to raise or hoist ; **máquina de e. el agua**, water-raising engine, **máquina de e. pesos**, hoisting engine, *see* **extraer** (1).

**ELEVATORIA**, *see u.* **bomba** (1).

**EMBALAJE**, packing (machinery, etc.), equiv. Fr. **emballage**.

**EMBANQUES**, Mex. met. the wall accretions of a water-jacket smelter ; these are chiselled off, or “barred out” (O. H. Hahn).

**EMBARCADERO**, (1) wharf or quay, *see* **muelle** (3) ; (2) port, harbour, *see* **puerto** (1) ; (3) rail. goods station or (U.S.A.) freight depôt, *see* **estación** (2).

**EMBARCADOR**, shipper, loader.

**EMBARCARSE LA VETA**, Peru, to be lost (as a vein) by reason of a fault or intersecting dike (Dwight).

**EMBARQUE**, shipment, *syn.* **despacho** (2), Mex. **remisión**, *comp.* **remesa**.

**EMBASTE**, mech. prep. dry concentration product of the **garbillo** (1).

**EMBESTIDOR**, *see u.* **aventadero** (1).

**EMBIJE**, **EMBIJETE**, Mex. thin coating of mineral on a joint, etc., *see* **barniz** (2).

**EMBOCADERO**, **EMBOCADOR**, mouth of a channel, by which water is conveyed through a mill-dam (Velázquez).

**EMBOCADURA**, mouth or entrance by a narrow passage ; e. **de un río**, mouth of a river, *see* **desembocadero**.



**ÉMBOLO**, (1) st. eng. piston, *see* **varilla** (2); pump. piston (Port. **zoncho** or plunger; é. **macizo** or **sólido**, pump ram or plunger, *syn.* **chupón** (1), *see* **cara** (3), **estopero**; a **bomba de e.** may be a draw-lift or plunger-pump, *see* **bomba** (1); (2) sucker of a pump, *see* **válvula**; (3) bucket of a drawing-lift or bucket-set, *see* **cuero** (3).

**EMBOÑIGAR**, to plaster (walls of houses, etc.) with cow-dung (**boñiga**).

**EMBOQUILLAR**, to make the beginning of a borehole, shaft, gallery, etc., to mark or start it, *syn.* **pintar** (2).

**EMBORRASCAMIENTO**, Mex. impoverishment (of a lode, etc.). According to St. Clair Duport, the general limit of profitable working in depth in Mexico is about 359·20 m., or 500 m. according to P. Laur *see* **dispersión**.

**EMBORRASCARSE**, Mex. to become impoverished or barren; "to meet a hard flinty rock (**pedernal duro**) instead of ore, or to lose the vein" (Gamboa), *see* **borrasca**, *comp.* **empobrecerse**.

**EMBOVEDAR**, to cover with an arch or vault.

**EMBOZADO** (lit. muffled), Mex. rich mineral entirely imbedded and concealed in barren rock (Dwight).

**EMBRAGADA**, *see* **u. viga**.

**EMBRAGUE**, (1) transp. clutch, coupling, shaft-coupling, *see* **conexión** (1); (2) **e. de inversión**, mech. reversing motion (Ponce de León) (3) **e. ranurado**, mech. slot (Ponce de León), *see* **u. ranura**.

**EMBREAR**, to coat with pitch, *syn.* **empegar**.

**EMBUDO**, (1) funnel or pipe; (2) Mex. hopper (Dwight), *see* **tolva** (1); (3) the funnel-shaped cave of ground produced in soft rocks, *comp.* **campana** (9), **chupón** (3), **revenimiento**.

**EMPALADO**, *see* **zarzo** (2).

**EMPALANCAR**, Col. to timber (Gamba), *see* **entibar**.

**EMPALMADURA**, *see* **empalme**.

**EMPALMAR**, (1) to scarf, to dovetail; to join timber, *see* **empatillar**, **empotrar** (2); (2) to clamp, to couple, *see* **u. juntar**; (3) to splice (a rope), *see* **empatar** (2); (4) Chile, to join (of veins), *see* **u. juntar**.

**EMPALME**, **EMPALMADURA**, (1) carp. scarf, timber joint, *see* **ajuste** (3); **e. de caja y espiga**, mortise and tenon, *see* **muesca** (1) and **espiga** (2); **e. de cola de milano**, dovetail joint; (2) splice (of a rope, etc.), *see* **empate** (2); (3) rail. junction of a branch with the main line; (4) c.m. level or branch setting off sideways from a gallery (Venator); (5) **cuña de e.**, *see* **u. cuña** (1).

**EMPANIZADA**, Cochabamba, Peru, said of a vein-wall which is altered or decomposed (Santo'alla).

**EMPAQUE**, packing.

**EMPAQUETADO**, st. eng. and pump. packing or gasket, *syn.* **empaquetadura** (1), **relleno** (1), Mex. **rondana** (2); **anillo de e.**, packing-ring of a piston (Fr. **bague d'emballage**); **e. de cañamo** (hemp) gasket; **e. de casquillo**, gland packing.

**EMPAQUETADOR**, packer.

**EMPAQUETADURA**, mech. (1) packing, *see* *empaquetado*, *guarnición* (2); (2) washer, *syn.* *prov.* *alfardón* (1), *anillo* (4) *de empaque*, *arandela*, Mex. *rondana* (3), *volandera* (3), *see* *disco* (4), *radochín*, *rodaja* (2).

**EMPAQUETAR**, to pack (goods); to pack pistons or pumps.

**EMPAREJAR**, (1) to level or square up; (2) to harness oxen, mules, etc., *see* *aparejo* (2) and (3).

**EMPATAR**, (1) mech. to couple or join; (2) to splice a rope, *syn.* *ayustar*, *empalmar* (3).

**EMPATE**, (1) mech. coupling, joint; (2) splice (of a rope, belt, etc.), *syn.* *ayuste*, *costura* (2), *empalme* (2), *injerto*.

**EMPATILLADO**, Mex. an inclined gallery, *see* *chiflón* (4).

**EMPATILLAR**, Col. to join timber, *see* *empalmar* (1).

**EMPEDRADO**, pavement.

**EMPEDRADOR**, paver or pavier.

**EMPEDRAR**, to pave, to floor with stones.

**EMPEGAR**, to pitch, to cover with pitch, *see* *embrear*.

**EMPELLAR**, Mineral del Oro, Mex. in extracting gold by the patio process, after the *granza* (1) has been ground in the *arrastre* (3) from six to eight hours, to add silver or copper amalgam in the proportion of 1.84 to 2.76 k. with double its weight of *cabecilla* (2), spreading the whole equally over the bottom (Ramirez).

**EMPENTA**, obs., prop, stay, shore, *see* *apoyo*.

**EMPENTAR**, to unite the excavations or supports of a mine so that they remain without interruptions (Acad.).

**EMPIEDRO**, paving; a dry wall (Velázquez), *see* *muro* (1).

**EMPLANCHADO**, *see u.* *tapestry*.

**EMPLEO**, Mex. in the patio process, the total quantity of mercury added to the *torta*, from this is obtained a certain quantity of amalgam [*pella* (2)] and filtered mercury, the difference being loss. In the retort (or *capellina*) a certain quantity of silver [*rosca* (3)] and mercury is obtained. The verification of the results is called *reconocimiento* (3).

**EMPLOMADA**, lead-poisoning.

**EMPOBRECERSE**, to become poor (of lodes), *comp.* *emborrascarse*.

**EMPROBECIMIENTO**, impoverishment (of veins, etc.), *comp.* *enriquecimiento*.

**EMPOTRAMIENTO**, scarfing two timbers together.

**EMPOTRAR**, (1) to mortise, to join with a mortise [*muesca* (1)], *syn.* *endentar* (1); (2) to scarf, to splice, *see* *empalmar* (1).

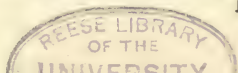
**EMPRESA**, enterprise, undertaking; management; company (*sociedad*).

**EMPUJADOR**, mech. face of a piston, equiv. Fr. *gâchette*.

**EMPUJE**, **EMPUJO**, thrust, pressure.

**ENAJENACIÓN**, alienation, the act of transferring property, *see* *traspaso*; expropriation (*expropiación*).

**ENAJENAR**, to alienate, transfer or give away property, *see* *traspasar*.



**EN ÁRBOL**, *see* árbol (4).

**EN BOLEO**, *see* u. boleó.

**EN BONANZA**, Span. Am. yielding profitable returns, *see* bonanza.

**ENCADENADO**, a method of timbering sometimes used in winzes, rises, or stopes, *see* Fig. 39.

**ENCADENAR**, *see* encadenado, encadene.

**ENCADENE**, Mex. in the patio process, the physical change that takes place in the mercury before it contains silver—in testing the *ceja* (1), the minute globules adhere to one another and form a kind of chain (*cadena*).

**ENCAJE**, (1) groove, *see* *muesca* (1); (2) socket, *see* *cubo* (4); (3) mech. gearing, *see* *engranaje* (2); (4) *see* u. *cuerpo* (5).

**ENCAJONADO**, mud-walling with *tapias*, *see* *tapia* (1).

**ENCAJONAMIENTO**, timb. *sollar* or bunding, *see* *camada* (3).

**ENCAJONAR**, to encase (sometimes used of rocks which enclose deposits).

**ENCALADURA**, whitewashing.

**ENCALAR**, (1) to whitewash, *see* *blanquear*; (2) to cover with plaster or mortar.

**ENCALLAR**, to jamb, or get anchored (used of sinking masonry), *syn.* *anclar*.

**ENCAMACIÓN**, (1) Almaden, Sp. timb. lagging in the roof and sides of the main galleries (*cañas*) and branch drifts (*hurtos*), *syn.* *e. enfajado*, or *enfajadas*, *see* *revestimiento* (1); (2) timb. lagging in the roof or floor, *comp.* *encostillado*, *encofrado*; (3) timb. a *sollar* or bunding which has other timbers crosswise on it to sustain deads, etc., *see* *camada* (3).

**ENCAMADOS**, Mex. timb. lagging in the roof of a gallery, *see* *guarnición*, *revestimiento* (1).

**ENCAMONADA**, *see* u. *camón* (1).

**ENCAMPANAR UNA MINA**, to cut off the workings of a mine on the underlay by working on the lowest workings from a neighbouring mine (M. J. Gloss.).

**ENCAMPANE**, Peru, amount of ground opened up on the underlie of a vein; difference of level between any gallery and the surface, *comp.* *tonga*.

**ENCAÑADOS**, Ant. Col. small horizontal polings used in roofing houses, *comp.* *solera* (5).

**ENCANALAR, ENCANALIZAR**, to convey (water, etc.) through pipes or conduits, *see* *encañar* (2).

**ENCAÑAR**, (1) to enclose a plantation with a hedge of cane; (2) to convey water through conduits or pipes, *see* *encanalar*.

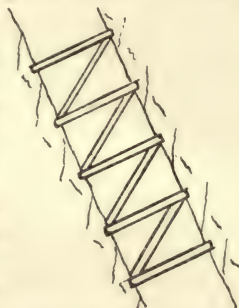


FIG. 39.—Encadenado  
(after Ezquerro).



- ENCAPADO, DA**, adj. cloaked ; **encapados**, Peru, deposits covered by vegetable earth (Santolalla) ; applied to a mine when the deposit does not crop out (Acad.).
- ENCAPILLADO**, blast. manhole.
- ENCAPILLAR**, to enlarge a mine-working [labor (2)] in order to start another from it (Acad.).
- ENCARGADO**, Mex. (1) superintendent, *see* **superintendente** ; (2) e. de negocios, agent, commissioner (Velázquez).
- ENCARNADO, DA**, adj. for **petlanque encarnado**, *see u.* **petlanque**.
- ENCENTRAR**, to enter a hill (of a vein), either on the line of strike or dip.
- ENCERADO**, (1) oilcloth, oilskin, *see* **hule** (1) ; (2) tarpaulin, *see u.* **lona**.
- ENCHARCADA**, pool of water, *see* **charco** (1).
- ENCHUCHAR**, rail. to switch (Ponce de León), *see* **desviar** (1).
- ENCHUFADO, ENCHUFE**, pipé-coupling, pipe-joint ; tongue or groove joint used in joining wooden boring-rods, *syn.* **enlace á enchufe** (Fr. **assemblage à enfourchement**) ; e. de media madera, plain joint, *see u.* **tubo** (1).
- ENCHUFAR**, to couple pipes, wooden rods, etc.
- ENCHUFE**, *see* **enchufado**.
- ENCIERRO** (enclosure), Ant. Col. configuration of the surface which has stopped the currents of streams, obliging them to deposit the gold-bearing alluvium (Uribe), *see u.* **ataje**.
- ENCIMADA**, top. plateau, *see* **meseta** (2).
- ENCINA**, evergreen oak or holm (*Quercus ilex*), *syn.* **chaparro**, *see* **roble**.
- ENCINTAR**, carp. to bind boards, etc., with cross-pieces of wood.
- ENCLAVAR**, to nail, *see* **clavar**.
- ENCOFRADO, DA**, pp. of **encofrar** ; for **represa encofrada**, *see u.* **represa** (1).
- ENCOFRADO**, (1) timb. lagging with planks, *see* **revestimiento** (1) ; (2) a gallery (**galería**) completely lagged with timber, *comp.* **encamación** (2), **encostillado**.
- ENCOFRAR**, to plank, to line with sheeting (Velázquez), to lag, *see* **revestir**.
- ENCOMANDITA**, *see u.* **sociedad**.
- ENCOMIENDA**, com. charge or commission.
- ENCONTRAR**, to meet (of veins), *see* **encuentro**.
- ENCOSTA**, (1) Port. declivity, slope, *see* **pendiente** (1) ; (2) **encostas**, Braz. alluv. m. hill-sides, etc., on which benches are found.
- ENCOSTILLADO**, timb. lagging on the sides of a gallery, *syn.* Guan. Mex. **costillar**, Pachuca, Hid. Mex. **tupidos**, *see u.* **guarnición**, **revestimiento** (1), *comp.* **encamación** (2), **encofrado** (2).
- ENCOSTILLAR**, to connect with staves, strips or ribs ; timb. to lag props laterally for the support of waste, etc.

- ENCRUCIJADA**, crossway, cross-road; railroad crossing, *see* **cruza-**  
**miento** (1).
- ENCUARTADORES**, *see* **u. llenador** (1).
- ENCUBADO**, (1) tubbing, *syn.* **entubación** (2), equiv. Fr. **cuvelage**; **e.**  
**de madera**, wooden tubbing (**entibado**); **e. de hierro**, iron tubbing  
[**entubado** (2)]; **e. de mampostería**, stone tubbing or coffering, *syn.*  
**revestimiento** (1) **de piedra**; *see* **u. cuña** (1); (2) **e. con puntales**,  
prop crib-timbering; **e. lleno**, solid crib-timbering; (3) **e. filtrante**,  
filtering tube, sometimes used in Artesian wells, invented by Lippman  
(Molina).
- ENCUENTRO**, (1) meeting another vein *b* when  
following *a*, *see* Fig. 40, *see* **bifurcación** (1),  
**ramificación arqueada**; (2) meeting of two  
galleries.
- ENCUÑADO**, dam in a mine, *see* **cerramiento**.
- ENCUÑAR**, to wedge.
- ENDCHADA**, Braz. a kind of hoe [**azadón** (1)]  
used by gold-washers.
- ENDENTAR**, (1) carp. to join with a mortise,  
*see* **empotrar** (1); (2) mech. to gear, to throw  
into gear, *see* **engranar**.
- ENDOBLE**, double shift, to enable miners and  
smelters to change shifts at the end of each week, *see* **doblar**, **relevo**.
- EN EL CUERPO**, *see* **cuerpo** (2).
- ENFAJADAS**, *see* **encamación** (1).
- ENFANGAMIENTO**, *see* **enlodamiento**.
- ENFERMAR**, to "sicken" (of quicksilver)—used by Gamba.
- ENFRIADERO**, cooler.
- ENFRIAR**, Mex. to add to the **torta** substances which reduce cupric to  
cuprous salts (Dwight), *see* **frío** (1), **torta**.
- EN FRUTOS**, in produce, producing ores, etc., *comp.* **bonanza**.
- ENGABARRADO, DA**, adj. **criadero engabarrado**, a deposit having ore  
very disseminated throughout, *comp.* **gabarro**.
- ENGANCHADOR**, (1) c.m. onsetter, hanger-on, hooker-on, bottomer  
or bridger, m.m. filler, *syn.* **minero cargadero**, *comp.* **amainador**, **llenador**  
(2), **mantero**, **pocero** (3); (2) Peru, agent [**agente** (1)] who, in the  
interior agricultural towns, contracts men for the mines; the miner  
advances money to the **enganchador**, who is also a merchant, who  
in turn furnishes provisions and liquor, and is responsible for his work  
(R. T. Mason), *comp.* **lazador** (2).
- ENGANCHAR**, (1) to fasten or hook on the bucket, kibble, etc., to  
couple, connect, *comp.* **desganchar**; (2) Peru, to engage miners, *see*  
**enganchador** (2).
- ENGANCHE**, (1) c.m. onsetting, m.m. filling, *see* **enganchador** (1);  
(2) c.m. inset, m.m. plat, *see* **cóncavo**; (3) hooking-on of wagons  
to ropes, chains, etc. (Fr. **attelage**); (4) transp. connecting-link

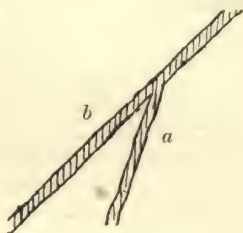


FIG. 40.—Encuentro.

- or hook, coupling, *see* *conexión* (1); *aparato de e.*, Mex. grip (Dwight).
- ENGATILLAR, to bind with a cramp-iron (Velázquez), *see* *gato* (2)
- ENGENHARIA, *see* *ingeniería*.
- ENGENHEIRO, *see* *ingeniero*.
- ENGENHO, *see* *ingenio*.
- ENGRANAJE, (1) gearing, throwing into gear; (2) gear, gearing, *syn.* encaje (3), *u.* fiador (2); *e. de fricción*, friction gearing.
- ENGRANAR, to throw into gear, to gear, *see* *endentar*.
- ENGRASADOR, (1) man who lubricates machinery; (2) lubricator, *see* *aceitera*, *u.* *copa* (1), *engrasadura*, *grasera*.
- ENGRASADURA, Mex. grease-cup (Dwight).
- ENGRASAR, to oil, lubricate.
- ENGRASE, oiling (Fr. *graissage*).
- ENJALBEGAR, to whitewash walls, *see* *blanquear*.
- ENJALMA, kind of pack-saddle, *see* *aparejo* (2), *jalma*.
- ENJAULAR, to load a cage; *see* *jaula* (2).
- ENLACE, (1) union or junction of galleries, inclined planes, roads, etc. (Fr. *raccordement*); (2) joint for timbers, etc., connection, *see* *ajuste* (3); *e. á rayo de Jupiter*, *e. á tope* (5), butt-joint; (3) connection, link, lacing.
- ENLADRILLADO, brickwork, *see* *mazonería*.
- ENLADRILLADOR, *see* *ladrillador*.
- ENLATAR, timb. to drive in laths [*latas* (2)], *see* *pilote* (2).
- ENLATONADO, *see* *u.* *tapestle* (1).
- ENLAZAR, to join (timbers, etc.), *see* *ensamblar*.
- ENLISTONAR, to lath, to batten.
- ENLODADURA, blast. claying of a borehole (Ponce de León), *see* *lodar*.
- ENLODAMIENTO, ENFANGAMIENTO, c.m. clay-dabbing to prevent fire spreading; pack-walls so covered = (N. Engl.) wax-walls.
- ENLODAR, to clay, *see* *lodar*.
- ENLUCIR, to whitewash a wall, to plaster, *see* *blanquear*.
- ENMACHEMBRAR, to scarf pieces of timber together (Velázquez).
- ENMADERACIÓN, timbering, *see* *entibación*.
- ENMADERADO (Port. *enmadeiramento*), (1) timbering, *see* *entibación*; (2) *see* *zarzo* (2); (3) timb. lagging, *see* *revestimiento* (1).
- ENMADERAMEN, *see* *entibación*.
- ENMADERAR (Port. *enmadeirar*), (1) to roof a house with timber; to floor with boards; (2) to timber, *see* *entibar*.
- ENMECHAR, carp. to rabbet.
- ENMEDIO, *see* *u.* *cuerpo* (5).
- ENNOBLECIMIENTO, *see* *bonanza*.
- ENRACHADO, *see* *u.* *tapestle* (1).
- ENRAMADO, *see* *u.* *tapestle* (1).
- ENREJADO, grate; *e. de hierro*, firegrate, *syn.* *fogón de rejas*, *see* *hogar* (1).



- ENRIELAR**, (1) to make ingots of gold or silver; (2) to lay rails; (3) to make rails.
- ENRIPIADO**, rubble-work, *see* **mampostería** (1).
- ENRIPIAR**, *see* **ripiar**.
- ENRIQUECERSE**, to become rich (of a mine).
- ENRIQUECIMIENTO**, enrichment (of veins), *comp.* **empobrecimiento**.
- ENROLLIZADO**, *see u.* **tapestle** (1).
- ENROLLIZAR**, timb. to prop with logs (Ponce de León).
- ENSACADURA**, loading into sacks.
- ENSACAR**, to load into sacks.
- ENSALMORAR**, Mex. to add salt, *see* **ensalmoro**.
- ENSALMORO**, Mex. in the **patio** process, the operation of adding salt (*sal marina* or *saltierra*) to the heap of **lama** (2), the quantity varies from 4 to 7 per cent. of ore.
- ENSAMBLADO**, Mex. in inclined shafts, timbering covering the footwall to facilitate the movement of the **mantas** (1). The cross-pieces to which the longitudinal ones are attached by a mortise joint and nails = *cana'ejas* (2) [*Pachuca, cabezales* (8)]; the pieces of boards at the side to avoid the separation of the **mantas** = *quijadas* (3) (*Carrión*).
- ENSAMBLADURA, ENSAMBLAJE, ENSAMBLE**, (1) timb. joint, *see* *ajuste* (3); (2) *ensamble de mineros*, *see u.* *cuero* (10).
- ENSAMBLAR**, to join or unite pieces of wood, *syn.* *enlazar*; to scarf, to dovetail, to mortise, *see* *machihembrar*.
- ENSAMBLE**, *see* **ensambladura**.
- ENSANCHADOR**, bor. enlarging or widening tool or reamer, equiv. Fr. *élargisseur*, Ger. *Nachbohrer*.
- ENSANCHAMIENTO**, *see* **ensanche**.
- ENSANCHAR**, (1) *e. el hilo*, Ant. Col. to cut down the soft wall of a lode, when the latter is not of sufficient width to carry the gallery or drift, *comp.* *desanchar, llauca*; (2) to enlarge a borehole; (3) *ensancharse*, to widen or make (of a lode, etc.).
- ENSANCHE, ENSANCHAMIENTO**, (1) *e. de un filón*, the widening, making or swelling (of a lode, etc.); bunch, blow or belly, *syn.* *anchura* (3), *buche*, *comp.* *estrechez*; (2) *e. de pozo*, widening of the shaft; (3) *método de e.*, *see u.* *grande*; (4) mech. boss or swelling (5) mech. reaming or enlarging a hole with a reamer; enlarging a borehole, etc.; (6) cutting down the soft wall of a lode, *see* **ensanchar** (1).
- ENSAYADOR** (Port. *ensa'ador*), (1) assayer, *see* **contraste** (1), **quilatador**; (2) Chile, in the **patio** process, the man who makes the tests in the *achúa*, *comp.* **tentadurero**.
- ENSAYAR** (Port. *ensa'iar*), to assay, *see* **contrastar** (1), **quilatar**.
- ENSAYE** (Port. *ensa'io*), (1) assay, fire-assay, *syn.* *e. docimástico*, **ensayo** (1), *see* **quilatación** (2), *ijada* (1), **tentadura** (2), **toque** (2); (2) in gold-washing, a trial made by the *batea* or pan; in the **patio** process, a test made of the *torta*, *see* **prueba** (1), **tentadura** (1) and (2); (3) assay-office (Dwight), *see* **contraste** (2).

**ENSAYO**, (1) assay, *see ensaye* (1); (2) e. real, Peru, assay made by bringing low-grade bullion to the assay of coin silver or gold. Pre-assay (Dwight); (3) com. sample.

**ENSILLAR**, to saddle.

**ENSOGAR**, to fasten with a rope.

**ENTABLADO**, DA, pp. of *entablar*, *see u. tapestle* (1).

**ENTABLADO**, floor made of boards, *syn. tillado*.

**ENTABLADURA**, flooring with boards, *syn. entable*.

**ENTABLAR**, to cover with boards; to floor with boards.

**ENTABLE**, *see entabladura*.

**ENTALLA**, Peru, notch or groove cut in timber, *see muesca* (1).

**ENTALLADURA**, (1) c.m. undercut, *see regadura* (2); (2) e. vertical, c.m. vertical cut or cutting-end (Ger. *Geschlitz*).

**ENTALLAMIENTO**, carp. mortise, *see muesca* (1).

**ENTALLAR**, c.m. to nick or undercut (Fr. *entailler*), *see socavar*.

**ENTARIMAR**, *see tillar*, and *u. tablero* (2).

**ENTIBACIÓN**, timbering of mines, *syn. ademación*, apeo (1), enmaderación, enmaderado (1), enmaderamen, fortificación con madera, equiv. Fr. *boisage*, Ger. *Zimmerung*; e. con estacas ó tablas, lagging, *see revestimiento* (1); e. de órgano, timbering with props in the method known as grandes tajos ascendentes; *see adema* (1), *ademe*, *ajuste* (3), *anillo* (2), *asnado*, *balsa* (3), *bantrote*, *brocal* (1), *caja* (12), *cajón* (11), *cama* (6) and (7), *camada* (3), *cárcel* (1) and (2), *carrera* (8), *cincho* (3) and (4), *cola* (3), *columna* (1) and (2), *contracielo* (2), *contramadre*, *corral* (2), *costilla* (4), *coz* (1) and (2), *crucero* (3), *encamación* (1) and (2), *encamados*, *encañados*, *estaca* (5) and (6), *estacada* (1) and (2), *forro* (2) and (3), *gualdrilla*, *jabalcón*, *llave* (3), *marco* (2), *mono* (1) and (2), *punto* (2) to (5), *riostra* (2) and (3), *viage*, *comp. reforze*.

**ENTIBADO**, wooden tubbing (Chalon), *see encubado* (1).

**ENTIBADOR**, timberman, *see palero* (4).

**ENTIBAMIENTO**, propping, shoring (Ponce de León).

**ENTIBAR**, to timber, *syn. ademar* (1), Col. *empalancar*, equiv. Fr. *boiser*, Ger. *verzimmern*, *comp. apuntalar*, *reforzar*.

**ENTIBO**, (1) stay or prop, *see apoyo*; single prop, *see mono* (2); (2) timb. leg-piece, *see peón* (4); (3) mas. buttress, *see estribo* (2).

**ENTRADA**, (1) entrance to a mine, *see u. boca* (2), *cabeza* (14); (2) shift or core, *see relevo*; (3) e. de aduana, custom-house entry; *derechos de e.* (Port. *direitos de e.*), import duty, customs dues, *see u. derecho* (2); (4) mech. admission (Ponce de León); (5) *see mechinales* (2); (6) point of timber in a wall, etc. (Acad.); (7) *see corte* (1); (8) *ajuste de e.*, *see Fig. 40A*.

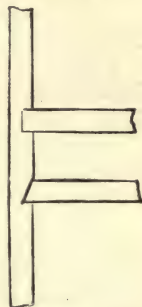


FIG. 40A.—Ajuste  
(3) de entrada  
(after Ezquerro).

**ENTRAR**, to join (of rivers), or to fall into the sea, *see* **desaguar** (2).

**ENTREGA**, putting in possession of a mine, etc.

**ENTREGARSE**, *see* **se entrega**.

**ENTRELEZADOS**, *see u. bolsada* (3), and **montón** (3).

**ENTREPISO**, (1) intermediate level, *see* **zapa** ; (2) space between two main galleries (Acad.).

**ENTRESUELO**, Mex. intermediate level, *see* **zapa**.

**ENTREVÍA**, transp. (1) gauge, *see* **ancho** (2) ; **e. común**, standard gauge ; (2) distance separating two parallel lines of railway (Molina).

**ENTROMPARSE**, Mex. met. to form a "nose" of slag in the blast-furnace, *see* **trompa** (2).

**ENTUBACIÓN**, (1) bor. lining of boreholes with tubes ; (2) tubbing *see* **encubado** (1).

**ENTUBADO**, (1) bor. tubing, *see u. tubería* ; (2) iron tubbing (Venator), *see u. encubado* (1).

**ENTUBAR**, (1) bor. to line a borehole with tubes ; (2) to tub.

**ENTUCAR**, Ant. Col. to overfeed a stamp-mill.

**ENVAINADO** (lit. sheathed), Mex. lost or left to one side (as a vein) (Dwight).

**ENVÍO**, remittance, consignment of goods, *see* **remesa**.

**ENVOLVENTE**, casing, *e.g.* (vent.), of a fan (**ventilador**).

**ENXADA**, Port. hoe, *see* **azada**.

**ENXADÃO**, Port. large hoe or mattock, *see* **azadón** (1).

**ENXOFRE**, Port. sulphur, *see* **azufre**.

**ENYESAR**, to plaster, to whitewash, *see* **blanquear**.

**EQUILIBRAR**, to balance, to counterbalance ; **motor equilibrado**, balance-motor.

**EQUILIBRIO**, balance ; counter-balance ; **e. de los cables**, counter-balance of hoisting ropes.

**EQUIPAJE**, baggage.

**ERA**, reservoir or pool in which salt water is evaporated by exposure to air and the sun's heat, *see* **balsa** (1), **cuaje**, *comp.* **tajería**.

**ERECCIÓN**, erection of machinery, plant, etc., *see* **montaje**.

**EREGIR**, (1) to erect machinery or plant, *see* **montar** ; (2) to build (**construir**).

**EROSIÓN**, geol. erosion, *see* **denudación**, **gastar**, *u.* **roedura**.

**EROSIVO**, **VA**, adj. Ant. Col. undermining (of water).

**ESBARANCADO**, Braz. huge irregular ravine, due to decomposition of micaceous and talcose schist (H. K. Scott), *comp.* **barranca**.

**ESCAFANDRO**, diving-dress, *see u. buzo*.

**ESCALA**, (1) ladder, *syn.* **escalera** (3), equiv. Port. **escada**, Fr. **échelle**, **escalier**, Ger. **Leiter**, **Fahrt** (miner's ladder) ; **e. de cuerda**, rope-ladder ; **e. de escapulario**, vertical ladder, used in shafts and winzes ; **e. mixta**, ladder with cheek-pieces of wood and rungs of iron, *see* **escalera** (2)



and (4); for parts of ladder, *see* *escalón* (1), *laña* (2), *largueños* (1); (2) *e. móvil* or *movediza*, man-engine, equiv. Fr. *échelle mobile*, Warocquiére, polka, Ger. *Fahrkunst*; (3) *plott. scale*, *syn.* *escalón* (3), equiv. Fr. *échelle*, Ger. *Scala*.

**ESCALAR**, (1) to climb by the help of ladders; (2) to raise the flood-gate [*compuerta* (2)] of a sluice, etc.

**ESCALERA**, (1) staircase, *see* *huella* (2), *peldaño*; *e. de caracol*, *see* *caracol* (3); (2) ordinary ladder, *syn.* Mex. *e. de barrotes*, *e. de gallinero*, *see* *escala* (1); step-ladder, or ladder similar to a sump-ladder, *syn.* *escala de peldaños planos* or *gradilla*; Mex. round timbers of 8, 10 or more yards in length, with notches [*muescas* (1)] cut in them, which serve as steps [*escalones* (1)]—a *sollar* or bunding [*descanso* (1)] being placed between two of these, *syn.* *e. de muesca*, often called “Mexican ladder”; *e. de papagayo* (parrot), Jacob’s ladder (made by cross-pieces fastened in centre to longitudinal piece hung vertically), *see* *espárrago* (2).

**ESCALÓN**, (1) step, round, rundle, rung or (U.S.A.) cross-piece of a ladder, *syn.* *cabillón*, *paso* (1), *peldaño*, *travesero* (2), equiv. Fr. *échelon*, Ger. *Sprosse*, *comp.* *grada* (2); step made of cross-timber in inclined shafts or galleries, *syn.* *Almería*, Sp. *tranco*, *see* *trancada*; (2) stope; *e. de banco*, *e. recto*, underhand stope; *e. de cielo*, *e. de testero*, *e. inverso*, overhand stope; *see* *bancada*, *banco* (2), *corte* (8) and (16), *grada* (2), *testero* (3); (3) scale, *see* *escala* (3).

**ESCALONADO**, *DA*, *adj.* *bombas escalonadas*, pumps in several lifts; *filón escalonado*, *see* *u. filón* (1).

**ESCALONAR**, to form into steps [*escalones* (1)], *e.g.*, an inclined shaft or gallery for ingress or egress of personnel.

**ESCAMA**, scale; *oro de e.*, *Ant. Col.* native gold in brilliant scales, spangle gold.

**ESCANTILLÓN**, (1) gauge, pattern, templet rule, *see* *plantilla* (1); in Mex. wooden ruler used by timbermen (Dwight); (2) angle formed by two walls (Velázquez); (3) S.E. Sp. in a rectangular shaft, a frame of timber in the sump [*caldera* (5)], and placed vertically below the day-frame (Molina).

**ESCAPE** (escape), *e. de vapor*, st. eng. leakage; *e. de agua*, pump. leakage; *e. de grisú*, c.m. blower or outburst of fire-damp.

**ESCAPULARIO**, *see* *u. escala* (1).

**ESCARCHA**, (hoar-frost) Peru, native silver (A. Raimondi), *see* *plata* (2).

**ESCARPA**, (1) steep slope, *syn.* *escarpadura*, *escarpe*, *see* *pendiente* (1); (2) *escarpas*, Huancavelica, Peru, walls of stone and lime, arranged step-fashion, to prevent subsidence; built by Marroquin at the end of the eighteenth century, but failed in their object (3) transp. fish-plate, *see* *eclisa*.

**ESCARPADURA**, *ESCARPE*, *see* *escarpa* (1).

- ESCARPIA**, transp. large spike [*espiga* (1)] used on railroads, equiv. Fr. *crampon*.
- ESCLUSA**, sluice, *see* *buzón* (3), *surtidero*; *compuerta de e.*, flood-gate, *see* *sangradera* (1); hydr. m. sluice, *see* *canalón* (3).
- ESCOBA**, broom.
- ESCOBILLA**, (1) brush, *see* *cepillo*; (2) small broom (*escoba*); (3) sweepings of assay-offices, etc.
- ESCOBIO**, Santander, Sp. narrow and deep valley (Sullivan and O'Reilly), *see* *valle*; narrow pass (Acad.), *see* *paso* (4).
- ESCOBO**, brushwood, briars, brambles.
- ESCODA**, an edged hammer (*martillo*) used by stone-cutters (Velázquez).
- ESCODAR**, to hew stones with an edged hammer (*escoda*).
- ESCOFINA**, carp. rasp or coarse file (*lima*).
- ESCOGEDOR**, Braz. ore-picker, sorter, *see* *apartador* (1).
- ESCOGER**, (1) mech. prep. to pick ore; (2) Ant. Col. to separate ore from rock in the mine itself, *syn.* *apartar*.
- ESCOGIDO**, (1) mech. prep. ore separated by hand; (2) ore-picking or separating.
- ESCOMBRA**, **ESCOMBRAMIENTO**, removal of rubbish or attle.
- ESCOMBRAR**, to remove rubbish.
- ESCOMBRERA**, place where waste from a mine is thrown, dump, *see* *vaciadero*.
- ESCOMBRO**, (1) rubbish, fragments of materials used in building; quarr. fragments, waste, *see* *ripio* (3); (2) *escombros*, waste rock or attle, *see* *desecho* (3), *u.* *zarzo* (2); (3) *escombros*, geol. detritus (*detrito*).
- ESCOPA**, a kind of chisel [*cincel* (1)] for chipping or cutting stones.
- ESCOPEA** (gun); *piedra de e.*, flint, *see* *pedernal* (2).
- ESCOPEAR**, to dig out the earth from gold mines (Acad.).
- ESCOPEADURA**, mortise, or groove, *see* *muesca* (1).
- ESCOPEAR**, to chisel, to cut with a chisel (*escoplo*).
- ESCOPLO**, carp. chisel, *see* *cincel* (1), *comp.* *formón*.
- ESCORIA**, (1) slag, *syn.* *crasas* (1), *grasa*, Mex. *natas* (2), *see* *miñón* (1), *plomillo* (2); (2) scoria, dross of metals, *syn.* *crasas* (2), *hez*, *horrura*, *see* *cagafierro*, *hoja* (4); (3) geol. spongy lava of volcanoes, *see* *lava* (2).
- ESCORIADERO**, met. front plate of the hearth, slag-plate (Ponce de León).
- ESCORIAL**, slag-heap, slag-dump, *see* *grasero*.
- ESCORIFICACIÓN**, assay. scorification.
- ESCORIFICADOR**, *see* *escorificatorio*.
- ESCORIFICAR**, assay. to scorify.
- ESCORIFICATORIO**, **ESCORIFICADOR**, (1) assay. scorifier; (2) furnace for scorifying.
- ESCOTA**, a kind of pick [*pico* (2)] used in mines; N. Sp. a kind of mattock or grubbing-axe (Velázquez).

**ESCOTAR**, to draw water from a river or brook by a ditch (*acequia*) or by other means.

**ESCRITURA**, deed, instrument, bond, contract ; **e. de venta**, bill of sale, deed of sale ; **e. de seguro**, policy of insurance ; **e. privada**, private contract or deed (in Mex. if consideration less than \$200) ; **e. pública**, recorded deed or deed drawn out by a public notary.

**ESCUADRA**, (1) square, carpenter's square, *see* **codal** (2), **cuadrado** (1) ; (2) **e. de agrimensor**, or **e. óptica**, surv. optical square ; (3) plott. set square ; (4) **e. falsa**, or **falsa e.**, false square.

**ESCUDO** (shield), timb. in spilling, the shield formed of breast-boards [tableiros (1)], *syn.* **mampara**, equiv. Fr. **bouclier** ; *see* Fig. 34 *b*.

**ESCUELA DE MINAS**, school of mines.

**ESCURRIMIENTO**, *see* **desliz**.

**ESE**, **S**-link of a chain.

**ESFÉRICO**, **CA**, adj. spherical, *see* **u. válvula**.

**ESLABÓN**, (1) link of a chain, *syn.* **anillo** (1) **de cadena** ; connecting-link ; **e. de seguridad**, safety-link ; **e. giratorio**, mech. swivel, *see* **torniquete** ; **movimiento de e.**, link motion ; (2) steel to strike fire with flint ; **e. neumático**, blast. pneumatic firer (*e.g.*, Bourdon's).

**ESLAMOSA**, foliated tellurium or nagyagite (Venator), *see* **telurio** (2).

**ESLIQUE**, schlich (Venator), *comp.* **marmaja** (2).

**ESMALTINA**, (1) smaltite ; (2) grey copper ore (**cobre gris**), *syn.* **pasta** (3).

**ESMANIL**, blende (**blenda**).

**ESMERALDA**, emerald, *see* **canutillo** (2), **morallión** ; for other varieties of beryl, *see* **berilo** ; for blemish in emerald, *see* **jardín**, **yerba** ; **e. oriental**, corundum (**corindón**).

**ESMERIL**, (1) emery ; (2) *see* **u. techichil**.

**ESMOLADERA**, whetstone, *see* **muela** (4).

**ESPADA**, the piece by which the cross-lever [**e peque** (1)] of a Chilian mill articulates with the vertical post [**peón** (3)].

**ESPALTO**, met. spalt or fluor spar used as a flux, *see* **u. espato**.

**ESPÁRRAGO** (asparagus), (1) mech. holding bolt (Ponce de León) ; (2) Jacob's ladder, *see* **u. escalera** (2).

**ESPARTO**, feather-grass ; leaves of ditto used for making ropes ; Spanish grass, hemp. The Romans used it for cordage, and called cords of it **spartium** (Weale) ; it is abundant in S. Spain, and was used almost exclusively for ropes up to about 1870, and to a depth of 200 m. ; it is now largely replaced by hemp, **abacá**, and steel-wire ropes ; **calabrote** or **cuerda acalabrotada** is a specially prepared **esparto** rope, used for raising and lowering personnel, *see* **cintero**, **hiscal** ; for baskets made of **esparto**, *see* **u. atecas**, **espuerta**.

**ESPATO**, spar ; **bruno e.**, brown spar (a var. of dolomite) ; **e. azul** or **e. fluor**, blue-john, or Derby. var. of fluor spar (**espalto**) ; **e. calizo**, calcite, *syn.* **caliche** (4), **espejuelo** (4), **guija** (4) ; **e. de hierro**, **e. ferrífero**, sparry iron (siderite), *see* **siderosa** ; **e. de Islandia**, Iceland spar



- (a var. of calcite); **e. de manganeso**, rhodocrosite or diallogite;  
**e. en tablas**, wollastonite; **e. pardo**, brown spar; **e. pesado**, heavy  
 spar, *syn.* **tierra pesada**.  
**ESPÁTULA**, spatula.  
**ESPECIFICACIÓN**, specification.  
**ESPEJADO** (mirror-like), Peru, galena (Dwight), *see* **galena**.  
**ESPEJO** (looking-glass), (1) mech. part of cylinder carrying the ports  
 (luces), equiv. Fr. *glace*; (2) Ant. Col. slickenside, *see* **plano** (4);  
 (3) *see* **obsidiana**.  
**ESPEJUELO** (dim. of **espejo**), (1) a transparent leaf of talc (**talco**);  
 (2) mica, *see* **mica** (1); (3) selenite or gypsum in transparent plates,  
*see u.* **yeso** (1); (4) Guerrero, Mex. and Chile, calcite, *see u.* **espato**;  
 (5) Real del Monte, Hid. Mex. galena in large crystals, generally poor  
 in silver, *see* **galena**; (6) Real del Monte, Hid. Mex. blende in large  
 crystals, generally poor in silver, *see* **blenda**; (7) Peru, lead car-  
 bonate, mixed with galena and grey copper (Dwight); (8) Mex.  
 slickenside, *see* **plano** (4); (9) Huelgáyoc, Peru, barytes (**baritina**).  
**ESPEQUE**, (1) Mex. the cross-lever of the **noria**, **tahona** or **malacate** to  
 which the mules are harnessed, the horse- or driving-beam, horse-arm  
 or sweep, *syn.* **palanca** (3), **viga**, *see* **espada**; the shorter lever is  
 called the **cruz** (4). When two mules are attached to one extremity of  
 the **espeque**, that portion is called the **cabeza del e.**, the free end =  
**cola del e.**, the outside mule is known as the **capitana**, and the inside  
 one as the **rueda** (Ramirez); (2) any wooden lever, *see* **palanca** (1).  
**ESPERKISA**, spear pyrites (a var. of marcasite), *see* **marcasita**.  
**ESPESOR**, thickness (of a vein or bed), *see* **anchura** (1).  
**ESPETÓN** (spit), (1) met. tapping-bar, *see* **botador** (3); (2) *see u.*  
**brasca**.  
**ESPIGA**, (1) spike (of wood or metal), *syn.* **espigón**, *see* **escarpia**, **perno**  
 (1), *comp.* **estaca** (7); (2) tenon, *syn.* **almilla**, equiv. Port. *fixa*, *see*  
**cola** (10), *u.* **empalme** (1), **empatar** (1) and **pisón** (2), *comp.* **muesca**  
 (1); (3) **e. de una viga**, web of a girder (Ponce de León).  
**ESPIGÓN**, spike, *see* **espiga** (1).  
**ESPILITA**, spilite, a chloritic and amygdaloidal diabase (J. D. Dana),  
 equiv. Ger. **Porphyrymandelstein**.  
**ESPINGUETA**, blast. a shooting-needle, *see* **aguja** (4).  
**ESPIOCHA** (from Fr. *pioche*), kind of pickaxe, *see* **zapapico**.  
**ESPIRA**, mech. helix, spiral line.  
**ESPODIO**, calx found in copper furnace (Velázquez).  
**ESPODITO**, whitish ashes of volcanoes (Velázquez).  
**ESPOLETA**, Mex. (1) the blasting charge for a small blast (Dwight);  
 (2) primer or blasting-fuse (Dwight).  
**ESPOLÓN**, spur (of a mountain), *see* **estribo** (1).  
**ESPONJA** (sponge), (1) a network of narrow ferruginous veins; (2)  
 Mex. spongy bullion after retorting and before melting (Dwight),  
*see u.* **plata** (1); (3) *see* **obsidiana**.

**ESPORAL**, *see u. capitán* (2).

**ESPORTÓN**, a large *espuerta*.

**ESPUELA** (spur), Mex. in the patio process, additional quantity of magistral added to complete the reduction.

**ESPUERTA**, a large and strong basket made of *esparto* grass, provided with two small handles (*asas*), *see canasta, capazo, esportón*. In the sulphur mines of S. Spain, baskets are attached, 10 to 12 feet apart, to endless wire rope which goes down to the bottom of the shaft.

**ESPUMA** (froth or foam), (1) *meerschaum, syn. e. de mar, piedra de pipas*; (2) *gossan (colorados), e. blanca, e. colorada, e. negra, etc.*; (3) *magnesia (Aragón)*; (4) *oro de e., Ant. Col. float-gold, see niño*; (5) *e. de nitro*, a crust formed by this salt on the surface of the ground when it is extracted, or when it crystallises; (6) *e. de la sal*, the soft and blackish substance left on the beach, rocks, etc., by the sea; (7) *e. de plata*, litharge; (8) dross of metals, etc., *see granza* (2); *e. de plomo*, lead slag, lead fume (*Ponce de León*); (9) *see hierro* (5).

**ESPUMERO**, place where salt water is collected to crystallise (*Velázquez*).

**ESPUMILLA**, *see u. tequezquite*.

**ESQUINA**, outside corner of a building, etc., *comp. rincón*.

**ESQUINAL**, corner plate, angle-iron.

**ESQUISTO**, shale, schist or slate; *e. bituminoso*, bituminous shale; *e. córneo*, hornslate (*see pizarra*); *see cascajo* (2), *churumbela, greda* (5), *hoja* (1) and (2), *negro* (3), *solapa* (3).

**ESQUISTOSO**, *SA*, adj. schistose; *arcilla esquistosa*, shale.

**ESTABLECIMIENTO DE MINERÍA**, Mex. Establishment of Mining, superseded by the *Junta de Fomento y Administración*.

**ESTABLO**, stable, *see cuadra* (1).

**ESTACA** (1) stake; *e. fija*, Mex. the post driven into the ground from which the claim or *pertenencia* was originally measured; (2) *estacas*, divisions or partitions made in mines; (3) *derecho de e., Col. mine tax (impuesto), see u. derecho*; (4) *Col. an individual who works a mine solely to retain proprietorship (Australia, shepherding)*; the owner of a mine who pays the tax but does not work it; *una mina en estaca*, an idle mine; (5) *estacas*, timb. spilling laths or piles, *see pilote* (2); (6) *estacas*, timb. laggings or lagging-boards, *syn. Mex. costillas* (4), *tablas* (1), *see u. entibación, guarnición*; (7) *estacas*, carp. clamp-nails, *comp. espiga* (1); (8) wooden peg, *see u. voladora* (3); (9) *barreno á e., blast. downward drill-hole, see u. barreno* (1).

**ESTACADA**, (1) paling or fence, *see cerca* (1); (2) Mex. the lagging of the sides of a shaft in open crib-timbering, *see guarnición*; (3) *estacadas cortadoras*, timb. spilling laths, *see pilote* (2).

**ESTACAR**, (1) to stake, to fence with stakes; (2) *surv. to stake out a claim, road, etc.*

- ESTACIÓN**, (1) season ; *e. de las aguas, e. de las lluvias*, wet season ; *e. de la seca, e. seca*, dry season ; (2) transp. station, U.S.A. *depôt*, *syn. paradero*, *see embarcadero* (3) ; *e. de descarga*, the loading station of wire ropeway ; *e. de descarga or de llegada*, the unloading station of ditto ; *e. intermedio*, auxiliary station of ditto ; (3) Col. length of 100 feet in lining out a railroad ; (4) surv. station, *syn. punto* (8) *de marca* ; (5) plat, *see cóncavo*.
- ESTACÓN** (aug. of *estaca*), large stake, *see u. tapón* (3) and *trincho* (2).
- ESTADAL**, land measure of 4 *varas*, or about 3·34 m. ; *e. cuadrado*, 16 square *varas* or 11·16 sq. m., *see u. fanegada*.
- ESTADÍA**, (1) transp. demurrage of a ship in port ; (2) cost of (1) ; (3) Mex. surv. levelling-rod (Dwight).
- ESTADO**, (1) a statement or account ; (2) ordinary height or stature of a man, sometimes used for measuring depths, etc., in Peru =  $2\frac{2}{3}$  *varas* (Dwight) ; (3) State (of a country).
- ESTAMPILLA**, (1) S. Am. revenue or postage stamp, *see sello* ; (2) *estampillas*, mech. prep. stamps, *see bocarte*.
- ESTANCAR**, to store water (in a reservoir, etc.).
- ESTANCIA**, (1) mansion or dwelling ; (2) S. Am. farm, country-house, *see hacienda* (1).
- ESTANCIERO**, (1) overseer of a farm, mansion or domain (Velázquez) ; (2) S. Am. small farmer.
- ESTANCO, CA**, adj. air-tight, water-tight, or steam-tight (Fr. *étanche*).
- ESTANCO**, (1) store for selling privileged goods ; a monopoly ; (2) tank, *see estanque* (3).
- ESTAÑO**, (1) tin ; *e. en lágrimas*, tear-shaped tin, produced by poling (berlingado) ; (2) tin ore ; *e. acarreo, e. de aluvión, e. de arroyo, e. de placeres, e. en grano*, stream tin ; *e. de Cornuallis, e. vídrroso* tinstone or cassiterite ; *see acopolado* (1), *correa* (3), *güijoles, hueso* (2), *lipta, llictería, plomillo* (2), *polvorilla* (7), *rubí* (2), *u. tierra, venero* (5), *vitriofo* ; (3) tin concentrates, *see barrilla* (5) ; (4) *e. de escoria*, met. slag-tin.
- ESTANQUE, ESTANQUE DE AGUA**, (1) pond, basin or reservoir, *syn. alberca* (1), *cisterna* (2), *cubo* (6), *depósito* (3), *reservatorio, reservorio, surtidero* (2) *de agua*, prov. *zafareche*, *see balsa* (1), *jagüey* (2) ; (2) dam of water, *see presa* (1) ; (3) cistern or tank, *syn. alberca* (2), *aljibe* (1), *arca de agua, cisterna* (1), *balsa* (4), *caja* (2), *depósito* (2), Mex. *tanque* (1), *see cachuco, pila* (2), *pileta* (1) ; *e. de clarificación or de depósito, cocha or balsa de clarificación, Mex. tanque de asiento, settling-tank, see chullador, chuza, descargadora, reposadero* (4) ; *e. de deslamar*, in the patio process, the tank in which the lama (2) is dried (Humboldt), *comp. lamero* (1) ; (4) natural underground reservoir of water, *syn. lago interior*, equiv. Fr. *amas d'eau, bains*, *see caja* (2), *comp. baño* (3), *torrente*.
- ESTANQUERO**, (1) keeper of reservoirs ; (2) retailer of privileged goods.



- ESTANTAL**, (1) buttress, *see* **estribo** (2); (2) timb. prop, stay, *see* **apoyo**.
- ESTANTILLOS**, Ant. Col. vertical poles, used in building houses, *e.g.*, 15 feet long and from 6 to 8 inches in diameter, *see u. punte*.
- ESTEATITA**, steatite or soapstone, *see* **jabón** (1).
- ESTELIÓN, ESTELÓN**, toad-stone (olivine-dolerite), equiv. Fr. **crapaudine**, Ital. **chelonite**.
- ESTEMPLE**, timb. according to Ezquerria, any timber which opposes longitudinal pressure (*i.e.*, in direction of the fibres), and in any position but vertical [when = **peón** (5)], *comp. puente* (4); stull-piece, stull or stemple, *syn.* Peru, **coche** (5), Zac. Mex. **riestra** (3), Ant. Col. **taco** (6), Peru, **tinca** (2), equiv. Fr. **étançon**, Ger. **Stempel**, *see* **asnado**, *u. barbacoas, cabeza* (1), *culata* (3), *lancera*, *remendado*, *templado*, *tornapunta* (2), *comp. freno* (3); *e. adintelado*, stull-piece or timber which sustains both lateral and longitudinal pressures (Ezquerria).
- ESTEMPLILLO**, timb. a small stull-piece, *see* **estemple**.
- ESTEOS**, Mex. vertical beams supporting the pulley of a hoist (Dwight), *see u. gualdra*.
- ESTEPA**, top. steppe, *see* **llano**.
- ESTÉREO**, stere or cub. m. (of firewood), *comp. cuerda* (5).
- ESTÉRIL**, adj. sterile, barren, *see u. macho* (4), and *materia, niegas*.
- ESTÉRIL**, (1) veinstone, *see* **matriz** (1); (2) barren rock, *see* **borra** (2), **borrasca** (2), **garduja**. NOTE.—Often used in plural.
- ESTERILIDAD**, sterility or barrenness of veins, rocks, etc.
- ESTERO**, (1) a large lake near the sea, a salt marsh (Velázquez), *comp. ciénaga* (1) and (2); (2) channel or arm connecting a river with the sea, and subject to tides.
- ESTIAJE**, the lowest stage of water in a river, in the summer season (*estío*), or season of drought (*Acad.*).
- ESTILETE** (dim. of **estilo**), style of an indicator, etc.
- ESTÍO**, summer, *see u. estiaje*, and **verano**.
- ESTOCADA** (stab), Chile, crosscut, *see* **crucero** (1).
- ESTOPA**, (1) refuse of flax or wool used for packing, "hards" (Fr. *étoupe*); tow, the coarsest part of hemp and flax, *comp. estopilla*; *e. de cañamo*, hemp tow, *syn. cañamazo* (1); (2) cotton waste (Dwight); (3) oakum.
- ESTOPERO**, that part of the piston [**émbolo** (1)] of a pump round which tow is wound (Velázquez).
- ESTOPEROL**, match or wick made of tow, *see* **mecha** (1).
- ESTOPILLA**, the finest part of hemp or flax, *comp. estopa* (1).
- ESTOPÓN**, coarse tow.
- ESTORACADA**, *see u. estoraque*.
- ESTORAQUE** (gum of the storax-tree), Guerr. Mex. blende (*blenda*), brown blende; **pinta estoracada**, ore containing yellow zinc-blende (Dwight).
- ESTOVERCA**, *see u. montón* (3).
- ESTRANGULACIÓN**, narrowing (of a vein), *see* **estrechez**.

**ESTRANGULADO**, *see u. vapor* (1).

**ESTRATIFICACIÓN**, geol. stratification.

**ESTRATIFICAR**, geol. to stratify.

**ESTRATIFORME**, adj. disposed in strata.

**ESTRATO**, geol. stratum, layer, bed, *syn. hebra* (3), *lecho* (2).

**ESTRECHAMIENTO**, e. del filón, nip or squeeze of the vein, *see estrechez*, *comp. agotamiento* (1).

**ESTRECHARSE**, to thin or become narrow (of a lode or vein), *comp. agotar* (1).

**ESTRECHEZ**, **ESTRECHÓN**, **ESTRECHURA**, narrowness of a vein or bed, *syn. angostura* (1), *see estrangulación*, *estrechamiento*, *estrellarse*, *comp. ensanche*.

**ESTRECHO**, (1) geog. strait; (2) narrow pass [*paso* (4)].

**ESTRELLARSE LA VETA**, Peru, to "peter out" or become lean, especially by scattering (Dwight), *see estrechez*.

**ESTRIADOR**, ore-sorter, *see apartador* (1).

**ESTRIAR**, to sort (mineral), *see apartar* (1).

**ESTRIBACIÓN**, *see estribo* (1).

**ESTRIBADERO**, prop, stay, *see apoyo*.

**ESTRIBADO**, timb. longitudinal timber common to a row of props, and on which the latter rest, *comp. carrera* (8).

**ESTRIBO**, (1) lateral ramification of a sierra or mountain chain, spur (Bárcena), *syn. contrafuerte* (3), *espolón*, *estribación*; (2) buttress, abutment, arch, pillar; buttress in a mine, *see contrafuerte* (1), *entibo* (3), *estantal* (1); (3) bor. stirrup, *see cabeza* (7); (4) Sevilla, Sp. timb. long timber joining or binding together the leg-pieces of door-frames (Molina)—old rails are sometimes used for this purpose; (5) *see bastidor* (3); (6) any stirrup or iron hoop; e. de guía, guide-stirrup for holding the end of a wire-rope.

**ESTRÍO**, e. de mineral, sorting, *see apartado* (1).

**ESTRUCTURA**, structure; e. bandeada, banded structure, *see cinteado*, da; e. concreccionada, concretionary structure; e. amigdalóidea, amygdaloid structure, *see Fig. 41*.

**ESTRUJAR**, to press or squeeze (amalgam, etc.).

**ESTRUJÓN**, Mex. in the patio process, amalgam strained from the mercury condensed in the quemadero (1); it is more pasty than pella (2) (Chism).

**ESTUCHE**, *see tubo-estuche*.

**ESTUFA**, a stove; Mex. in the patio process, a chamber with flues under the floor for heating the torta.

**EVAPORACIÓN**, evaporation; for that of salt, *see charco* (2), *pila* (3); e. del oro, Ant. Col. retorting of amalgam, *see quema* (3).

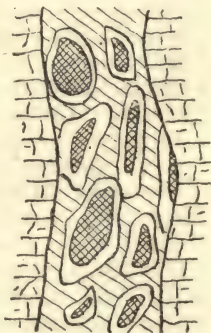


FIG. 41.

Estructura amigdalóidea  
(after Moucada).

- EVAPORAR**, to evaporate (salt water, etc.); e. *el oro*, Ant. Col. to retort amalgam, *syn.* Peru, *refogar*, *see* *destilar*, *quemar* (3); *oro evaporado*, retorted gold, *syn.* *oro quemado*.
- EVICCIÓN Y SANEAMIENTO**, Mex. a deed which warrants the titles of a mining property or real estate.
- EXCAVACIÓN**, excavation, *see u. cata* (4), *labor* (2); e. *á cielo abierto*, quarry or open cut, *see tajo* (2); for *excavaciones auxiliares* or *excepcionales*, *see anchurón* (1), *cóncava*; *excavaciones subterráneas*, underground workings or mines.
- EXCAVADOR, RA**, (1) rock excavator; (2) dredge (*draga*); e. *de cuchara*, spoon-dredge.
- EXCAVAR**, (1) to excavate, *comp. perforar*; (2) to dredge, *see dragar*.
- EXCÉNTRICA**, mech. eccentric (Fr. *excentrique*).
- EXFOLIACIÓN**, cleavage, or foliated structure, *see crucero* (4).
- EXHIBICIÓN**, Mex. assessment (Dwight).
- EXPEDIENTE**, dispatch, writing issued from public Boards and offices, docket (R. E. Chism), *syn. autos* (but latter principally used in connection with the *expedientes* compiled during a law-suit), equiv. Fr. *procès-verbal*.
- EXPLANACIÓN**, levelling of a railroad, *see allanar*.
- EXPLORACIÓN**, (1) exploration, prospecting; (2) a prospect.
- EXPLORADOR**, explorer, prospector, *comp. cateador*.
- EXPLORAR**, to explore, prospect, *comp. catear*.
- EXPLOSIÓN**, explosion.
- EXPLOSIVO, VA**, adj. explosive.
- EXPLOTABLE**, workable, that can be mined.
- EXPLOTACIÓN** (Fr. *exploitation*), exploitation, working, or winning, *see laboreo*; e. *ascendente*, working upwards; e. *por gradas al revés* or *por testers* (Fr. *exploitation par gradins reversés*), overhand stoping, *see testero* (3); e. *por gradas derechas*, (Fr. *exploitation par gradins droits*) overhand stoping, *see rebajo* (2); e. *por rellenos*, *see u. relleno* (2).
- EXPLOTADOR**, adventurer, lessee, owner (Ponce de León).
- EXPLOTAR** (Fr. *exploiter*), to exploit, work or win; e. *una mina*, to work a mine, *see trabajar*.
- EXPORTACIÓN**, exportation, *see saca* (1).
- EXPROPIACIÓN**, expropriation; in Mex. the legal transfer of the surface from surface-owner to mine-owner. For method pursued for obtaining forcible expropriation, consult Chism, *see enajenación*.
- EXPROPIAR**, to expropriate.
- EXPULSAR**, e. *el vapor*, st. eng. to blow off steam (Ponce de León).
- EXTRACCIÓN**, (1) extraction, winding or hoisting (Fr. *extraction*), *see cuerpo* (6), *despojo*, *manteo* (1), *saca* (2), *comp. transporte*; e. *en rosario*, Sierra de Gador, Sp. (sulphur mines), extraction by a string of baskets attached to an endless rope (Molina); e. *por cuerda*, rope extraction; *aparato de e.*, hoisting-engine; (2) output (Venator), *see abasto* (2), *producción, saca* (3).



- EXTRACTO**, extract ; **extractos**, Mex. summary of an application for a mining concession, published on the Bulletin board ; excerpts.
- EXTRACTOR**, extractor ; **e. de carbón**, coal-getter ; apparatus for extracting the precipitated salt in Paccard's method, *see* **calorífero** ; **e. Koerting de vapor**, Koerting's injector.
- EXTRAER**, (1) to extract, wind or hoist (Fr. *extraire*), *syn.* **elevar**, **sacar** (1) ; (2) to pump, *syn.* **sacar** (2) **agua**, *see* **desaguar** ; **máquina de e. agua**, pumping-engine.
- EXTREMIDAD**, **e. de la galería**, end, forebreast, *see* **frontón** (1).
- EZTERI**, green jasper with reddish veins, like bloodstains, found in S. America ; a kind of bloodstone, *see* **jaspe** (1).
- FÁBRICA**, (1) fabric, structure, building ; (2) brickwork, stonework ; **pared de f.**, wall made of brick or stone.
- FABRICAR**, to build, construct, *see* **construir**.
- FACTURA**, bill, invoice ; way-bill, bill of sale (ore-buying).
- FAENA**, (1) work, labour, task, *see* **trabajo** (1) ; (2) Mex. dead-work, as putting up an air-shaft, driving a cross-cut or unwatering, *syn.* **muerta**, *see u. obra* (2) ; (3) **trabajar á f.**, Mex. to receive less wages, and to share the ore equally with the owner (Gamboa), *see* **tequío**.
- FAENERO**, (1) rubbish carrier, *syn.* **cargador** (2) ; (2) common labourer, *see* **trabajador**.
- FAGINA**, *see* **fajina**.
- FAISCA**, Port. flake ; auriferous sand ; particle of gold.
- FAISCADOR**, Port. a gold-washer, placer-miner ; Minas Geraes, Braz. batea washer, *syn.* **faisqueiro**, *comp.* **buscones** (1), **cateador**.
- FAISCAR**, Port. to search for gold sand (Elwes), *comp.* **catear** (1) ; **f. nas minas**, to gather gold sand.
- FAISQUEIRA**, Port. a place where gold sand is found (Elwes), *see* **placer**.
- FAISQUEIRO**, *see* **faiscador**.
- FAIZADA**, *see* **bayeta**.
- FAJA**, (1) band of mineral in a vein, *see* **cinta** (2) ; (2) band or belt of rock, *see* **zona** (2) ; (3) a horizontal cut (**tajo**) in a vein, *see* **labra** (2) ; **fajas horizontales longitudinales**, a method of working veins of small thickness by horizontal cuts, *syn.* **galerías de disfrute**, equiv. Fr. **méthode horizontal**, **mode en long** ; another method is by **fajas horizontales ascendentes** or **plantas** (2) **horizontales** (Molina) ; (4) mech. belt or belting, *see* **correa** (2).
- FAJADO**, (1) large timber or plank, used in making sollars (Acad.), *see* **camada** (3) ; (2) Linares, Sp. timb. sollar, *see* **camada** (3) ; (3) round timber used in supporting shafts (Acad.), *see* **rollizo**.
- FAJEADO, DA**, adj. banded (of structure), *see* **cintado, da**.
- FAJINA**, fascine ; fagot, *see* **haz** (1) ; **fajinas (faginas)**, Burgos, Sp. bundles of boxwood, used for supporting levels driven round large blocks of salt (Molina).

- FALDA**, (1) top. the slope or declivity of a mountain or hill : Velázquez gives " brow of a hill, that part of an eminence which slopes into the plain," *syn.* **loma** (2) ; (2) geol. the wing or leg of a saddle, *see* **sillar** (4) ; (3) mech. lap, *see* **solapa** (2).
- FALDEAR**, eng. to cut a road on the slope of a mountain (Ponce de León).
- FALHA**, Port. fault, *see* **falla** (1).
- FALLA**, (1) geol. a fault, *syn.* Ant. Col. **liso** (3), **quiebra** (2), equiv. Port. **falha**, Fr. **faille**, Ger. **Störung**, *see* **junta** (3) ; f. **falsa** or **falsa falla**, a pseudo-fault or interruption in a bed or seam, a " horse," *see* **caballo** (4) ; for throw of a fault, *see* **salto** (1) ; (2) Mex. vein of soft rock at right angles to drift (Dwight).
- FALSO**, **SA**, adj. false, counterfeit ; f. **matriz**, false or pseudo-matrix ; **falsa peña**, *see* **peña** (6) ; **falso salto** (Fr. **faux rejet**), false throw, a vein which, meeting an older one, follows the direction of the latter for a certain distance, and then pursues its normal course ; **falso**, Mex. treacherous (of ground), *see* **flojo**, **ja**.
- FAMATINITA**, famatinite, a copper ore [**cobre** (2)] containing 43·84 to 44·87 per cent. of copper, 2·93 to 4·01 per cent. of arsenic, 23·10 to 23·65 per cent. of antimony, and 28·55 to 29·05 per cent. of sulphur. It is found at Famatina, Province of La Rioja, Arg.
- FAMULIA**, Peru, wedge, gad (Dwight), *see* **cuña** (2).
- FANA**, *see* **freita**.
- FANAL DE VÍDRIO**, light. a glass shield for protecting the globe of an incandescent safety-lamp, *see* **u. lámpara**.
- FANEGA**, a measure for grain—that of Castile = 12 **celemines** and is equiv. to 55½ litres, it varies provincially as well as in the various countries of America ; f. **de tierra**, *see* **fanegada**.
- FANEGADA**, or **fanega de tierra**, that of Castile = 576 **estadales cuadrados**, equiv. to 64·596 **áreas** (Acad.).
- FANGO**, (1) slime, *see* **lodo** ; (2) Carmen Island, Gulf of Cal., Mex. here a 5 to 8 inches layer of salt (containing 98 per cent. of NaCl), alternates with a 3 to 5 inches layer of black earthy salt called **fango**, weathering to white, and containing 60 per cent. of NaCl. The total thickness of the salt layers is 15 feet, 2 feet of solid salt [**sal** (1)] being found at the bottom ; (3) **colector de f.**, Mex. mud-drum (Dwight).
- FANGOSO**, **SA**, adj. muddy, miry ; mech. prep. containing much slime.
- FARALLÓN**, (1) small rocky island in the sea ; **farallones**, masses of rock in the beds of rivers ; (2) Peru, projecting outcrop of a vein or other deposit, *see* **crestón**. NOTE.—The name is sometimes applied to a mountain crest, *e.g.*, " el Gran Farallon " (sandstone) of Huancavelica.
- FAROL**, a large lantern [**linterna** (1)] used in mills ; the frame is generally of wood, having a socket for the candle—it is usually covered with muslin.

**FAVAS** (broad beans in Port.), Braz. in the diamond fields, brown pebbles, consisting of a hydrated phosphate, or of titanium and zirconium oxides (Bauer), and regarded as good indicators, *comp.* **feijoes**.

**FAZENDA**, *see* **hacienda** (3).

**FEIJÕES** (black kidney beans in Port.), Braz. in the diamond fields, black rounded pebbles of tourmaline (Bauer), or tourmaline rocks, and looked upon as good indicators, *comp.* **favas**.

**FEITOR**, Braz. overseer, *see* **sobrestante**.

**FELDESPATO**, feldspar; **f. nacarado** or **opalado**, adularia [var. of monoclinic potash feldspar or orthoclase]; **f. sódico**, albite [soda feldspar-triclinic]; **f. verde claro**, amazon stone [var. of triclinic potash feldspar or microcline]; **f. vítreo**, sanidine [var. of orthoclase] (Ponce de León).

**FELSITA**, feldspar.

**FENDA**, Port. fissure, *see* **hendedura**.

**FÉRREA**, *see u. vía* (1).

**FERRERÍA**, (1) ironworks; (2) foundry, *see* **fundición** (3).

**FERROCARRIL**, railway, railroad; **f. aério**, ropeway, *see* **andarivel**; **f. de cremallera**, rack railroad, or one with pinions and geared rails (*e.g.*, Righi railway); **f. de cremallera de escalera**, Riggenbach's rack and pinion system; **f. de sangre**, horse railroad or horse tramway; **f. de vía angosta** or **estrecha**, narrow gauge railroad, *see u. camino* (1), *vía* (1).

**FÉTIDO**, **DA**, adj. fetid; **piedra fétida**, "stinkstone."

**FIADOR**, (1) bondsman, guarantor, surety, *see* **fianza**; (2) safety-catch, detent, etc.; **f. de un engranaje** (2), catching lever; **f. de rueda**, dog; **f. de rueda dentada**, ratchet pawl; **f. de trinquete**, click, pawl, detent (Ponce de León), *see remarks u. trinquete*; *see* **diente** (1), **linguete**, **retén**, **seguro** (3); (3) supplementary rope used in shaft for men to hold on to when ascending and descending, *syn.* **Sierra de Gador**, Sp. **güejo**, **huejo** (Molina), *see* **bajada** (1).

**FIANZA**, bond, security or bail given by a **fiador** (1).

**FIBRA** (fibre, filament), (1) yarn, *see* **hebra** (1); (2) vein of ore (Velázquez); **fibras**, Parral, Chih. Mex. small veins which cross and intersect each other in many directions (N. Dominguez), a kind of stockwork, *see u. montón* (3), **veta** (1), **vetilla**.

**FIBRAZÓN**, the whole of the ore-veins of a mine (Velázquez), *see* **veta** (1).

**FIEL**, mech. needle of a balance, pivot of a steel-yard (**romana**), *see* **lengua** (6).

**FIERRERO**, workman who receives and distributes the tools, etc., *see* **abajador**.

**FIERRO**, *see* **hierro**.

**FIERROSO**, *see* **hierroso**.

**FIGULINA**, *see u. arcilla*.

**FIJO**, **JA**, adj. fixed, stationary; **motor fijo**, stationary motor.

**FILA**, (1) line or row; **f. de peones**, timb. row of props; (2) prov. unity



of measurement for estimating water in leats, varying from 46 to 86 litres per second (Acad.), *see* **teja** (3).

**FILADA**, phyllade, a var. of slate (**pizarra**). "Minute scales may develop along the cleavage-planes, and a wrinkling of the latter at the same time produces the link with mica-schist, called 'phyllade' by d'Aubuisson" (G. A. J. Cole).

**FILÁSTICA**, *see* **u. hebra** (1).

**FILETE** (fillet), **f. de tornillo** (1), or **de rosca**, thread of a screw, screw-thread.

**FILO**, *see* **bisel** (2).

**FILÓN**, (1) a vein or lode (Fr. **filon**), *see* *remarks u. veta* (1); **f. capa** or **capa de f.**, bedded vein; **f. compuesto**, compound vein; **f. cuneiforme**, gash vein, or vein whose transverse section affects the form of a wedge; **f. de contacto**, contact vein; **f. doble**, two veins which meet and run alongside of each other, the filling of each remaining distinct; **f. en escalera** or **f. escalonado**, *see* Fig. 42; **f. en rosario** (Fr. **fi'on-en-chapelet**), beaded vein; **f. metalifero**, **f. mineral**, metaliferous vein or lode; **f. simple**, ordinary vein of simple structure; **f. sin crestones**, blind vein; **f. transversal**, cross-vein; (2) Mex. small stringer; intersecting vein (Dwight), *see* **vetilla**; (3) **f. de roca**, a dike or channel, *see* **dique** (5); (4) mineral layer (Velázquez); **f. de carbón**, coal measure (Ponce de León), *see* **capa** (1); (5) gangue, *see* **matriz** (1).

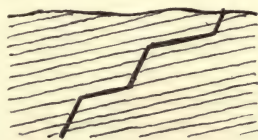


FIG. 42.—Filón en escalera.

**FIM DE CABECEIRA**, Minas Geraes, Braz. end or face of a level, *see* **frontón** (1).

**FINCA**, (1) property, especially land; S. Am. a large farm, *see* **hacienda** (1); (2) building, house, real estate.

**FINGIDA**, *see* **u. camón** (1).

**FINO**, NA, adj. *see* **precioso**, sa.

**FINOS**, Mex. fine ores, "fines" (Dwight), *comp.* **grueso** (2).

**FINQUITA**, S. Am. small farm, *see* **finca** (1).

**FIRME DE UN CAMINO**, ballasting, metalling of a road, *see* **afirmación**.

**FISURA**, geol. fissure, *see* **hendedura**.

**FIXA**, (1) Port. tenon, *see* **espiga** (2); (2) **f. de trilhos**, Minas Geraes, Braz. fish-plate, *see* **juneta**, **mordaza** (3).

**FLANCO**, *see* **pendiente** (1).

**FLAQUEZA** (leanness), Peru, (1) shaly structure; (2) the overhanging section of a precipice (**precipicio**) (Dwight).

**FLECHA**, (1) plott. arrow indicating north, the current of rivers, etc.; (2) var. of hydroxide of iron called "love's dart" (Velázquez); (3) **f. de una grúa**, jib of a crane (Ponce de León), *see* **aguilón**; (4) Mex. machinery-shafting (Dwight), *see* **guijo** (2); (5) height of an arch (**arco**), *see* **sagita**.

**FLEJE**, hoop ; f. de hierro, iron strap, band or hoop.

**FLETE**, (1) carriage or freight ; S. Am. usually freight by mules or oxen ; (2) freight charges ; (3) pump. set of pumps, *see u. juego* (1).

**FLOJO, JA**, adj. weak, blast. applied to a weak explosive, *comp. u. fuerte* ; loose, **terreno flojo**, loose or treacherous ground, *see also u. falso, sa.*

**FLOR** (flower), (1) Mex. in the **patio** process, the richest scrapings from the bed of the **arrastre** (3), *syn. raspadura* (3), *comp. contráraspa* ; (2) **flores de antimonio**, va'entinite or white antimonial ore ; **flores de cobalto**, cobalt bloom ; **flores de níquel**, nickel green or annabergite ; (3) surface of the earth, *see u. tierra* (3) ; for **barrenos de f.**, *see u. barreno* (2) ; (4) f. **amarillo**, Venez. best wood for battery-posts, mortar-blocks, sills, etc. (G. P. Ashmore and C. Seale) ; (5) dross (**hez**) of metals which comes off in thin scales when heated and put into water, *see escoria* (2) ; (6) flos, resulting from the sublimation of minerals, etc.

**FLORIMBO, FLORIMBORDE**, *see tabloncillo.*

**FLUJO**, met.) flux, *see fundente.*

**FLUOR ESPATO**, fluor spar.

**FOCO**, (focus), Mex. electric arc or incandescent lamp (Dwight).

**FOGAÑA DE HORNO**, Peru, firepit of a furnace (Dwight), *see hogar* (1).

**FOGATA**, blaze, light of a flame ; Mex. fumes from blasting (Dwight).

**FOGÓN**, (1) hearth, *see hogar* (1) ; (2) firebox of a locomotive, *see hogar* (2).

**FOGONERO**, fireman or stoker, *syn. atizador* (2).

**FOMENTO**, (1) fuel, *see combustible* ; (2) protection, support, encouragement ; **Junta de F. y Administración**, Board of Encouragement and Administration (of Mining), *see Establecimiento, Ministerio, Secretaría* ; (3) st. eng. priming (Ponce de León), or carrying over of water with the steam into the cylinder.

**FONDA**, inn.

**FONDEO**, timb. pent-house, *see resguardo* ; temporary staging in a shaft (Dwight).

**FONDO**, (1) Mex. a **cazo** (2), called so because the bottom (**fondo**) is made of copper ; Chile, iron cauldron used in the system of **paradas** (5) (2) *see reposadero* (2) ; (3) bottom of a mine [*comp. chile* (2)], of a shaft [*caldera* (5)], of a river, hill, valley, etc. [*see hondo*] ; (4) bed of



FIG. 43.

Fondo (6) de barco.



FIG. 44.

Fondo (6) de barco invertido.

a furnace, etc. *see reposadero* (3) ; **piedras de f.**, stones forming the bed of an **arrastre** (3) ; (5) f. **flotante**, diaphragm or false-bottom (Fr. *cuvette*) used in the Kind-Chaudron method of shaft-sinking ; (6) f.

- de barco, geol. inflections of strata like the bottom of a ship (Fr. *fond de bateau en place*) as seen in longitudinal section, *see* Fig. 43 ; f. de barco invertido (Fr. *fond de bateau renversé*), *see* Fig. 44 ; (7) thickness of a diamond (*diamante*) ; (8) f. de granza, *see* cama (9) ; (9) stock, fund, capital effects ; *fondos públicos*, State securities (Velázquez).
- FONDÓN**, Mex. a large cazo (2), *see* St. Clair Duport, Pl. III. Fig. 2.
- FORASTERO**, RA, adj. veta forastera, Chile, newly discovered vein.
- FORASTERO**, stranger to a town or place, not necessarily a foreigner.
- FORJA** (1) forge, *syn.* herrería (3), *see* fragua ; place where silver is beaten into form (Velázquez) ; f. catalana, Catalan forge ; *see* taca ; (2) forging ; (3) mortar, *see* argamasa (1).
- FORJAR**, (1) to forge, *see* fraguar (1) ; (2) mas. to fill with mortar and rubbish (Ponce de León).
- FORMAÇÃO**, (1) Ouro Preto, Braz. ore, *see* metal (2) ; (2) formações, Braz. minerals occurring in cascalhos (2) with diamonds, as rutile, octahedrite (anatase), brookite, menaccanite (titanic iron), hematite, magnetite, quartz, cyanite (disthene), tourmaline, gold, chlorophosphates, garnet, zircon, topaz, titanite (sphene), cassiterite, etc. (Bauer).
- FORMACIÓN**, (1) geol. formation ; (2) distribution, position and general state in which any mineral presents itself ; (3) Col. altered "country" forming the filling of a lode, sometimes with stringers of quartz or other mineral, and sometimes consisting of clay alone, analogous to "mullock" of Australia, and "bluff" of U.S.A., *comp.* carrancho (1), *u.* cascajo (3), jaboncillo (2), terrosas.
- FORMAL**, adj. regular ; Mex. undisturbed (of strata, etc.).
- FORMALIZAR**, Mex. to formalise a contract or other legal paper (Dwight).
- FORMENO**, marsh gas, *see* hidrógeno protocarbonado.
- FORMÓN**, carp. paring-chisel, *see* cincel (1), *comp.* escoplo.
- FORNILHO**, Port. chamber of a mine (Elwes), *comp.* anchurón (1).
- FORRO**, (1) any lining ; f. de vapor, steam lining ; forros, linings of a stamps battery [*see* chapa (4)], met. linings of a converter [*see* revestimiento (2)], etc. ; (2) Zac. Fresnillo and Pachuca, Mex. second and third portions of timber sustaining the walls of a shaft, *syn.* Guan. cajón (17), tramo (3), *comp.* cajón (11) ; (3) Mex. timb. lagging, *see* revestimiento (1) ; poner un f., to re-lag timber, or put new timber on the inner side of old timber.
- FORTIFICACIÓN**, supporting of mines, includes timbering, masonry, etc., *syn.* Peru, releje, sostenimiento, equiv. Fr. soutènement, Ger. Grubenausbau ; f. con madera, timbering, *see* entibación.
- FORTIFICAR**, to support mines by timber, etc., *syn.* Peru, relejear.
- FORZADOR**, RA, *see* u. bomba (1).
- FOSA** (obs. pit, hole), (1) f. de reconocimiento, trench (Venator), *see* zanja (1) ; (2) pit at bottom of inclined plane for the platform or counterweight to rest in when loading or unloading (Molina).
- FÓSFORO**, phosphorus.



**FÓSIL**, (1) geol. fossil ; (2) any mineral or rock.

**FOSO**, pit, *see* hoyo (1).

**FRACTURA**, (1) geol. fracture ; f. *sencilla* or *junta* (2), simple fracture or joint, *see* *juntura* (2) ; f. *rellena*, fracture with filling between ; (2) surg. fracture.

**FRAGA**, *see* u. maza (3).

**FRAGUA**, smithy or smith's shop ; forge, *see* forja (1).

**FRAGUAR**, (1) to forge, *see* forjar (1) ; (2) to unite in a mass : applied to clay and mortar (Velázquez).

**FRAILE**, the upright post of a flood-gate [*compuerta* (2)] in water-mills (Velázquez).

**FRAILESCA**, Almaden, Sp. a metamorphosed breccia [*brecha* (2)] consisting of grains of quartz, calcium carbonate, dolomite, and fragments of schist, cemented by dolomitic calcite (G. F. Becker) it forms lenticular masses in schist, composed of breccia, of fragments of schist and serpentine, grains of quartz, calcite, etc., cemented by an amorphous feldspathic paste (De Prado)—so called because it generally has the grayish colour of the habit of Franciscan friars (*frailes*), *syn.* *piedra frailesca* or *franciscana*.

**FRANCISCANA**, *see* *frailesca*.

**FRANCO**, CA, adj. free, for *piedra franca*, *see* u. *piedra* ; exempt from charges, freight or duty ; f. *á bordo*, free on board ; f. *de porte*, postage free ; *puerto franco*, free port.

**FRANQUEO**, *see* u. labor (3).

**FRASCO**, flask, one frasco or botella of quicksilver contains 75 lb. avoird.

**FREITAS**, Santander, Sp. great landslips, *syn.* *fanas*, *see* *derrumbe* (2). "Natural and constant landslips which occur in certain localities where the rock is so shivered and crumbling as not to be able to sustain its own weight on the highly inclined mountain side, and where their loose structure being acted upon by infiltrating waters, peculiar to the surface ground, a portion of the mountain side has been brought down. The gap thus opened continues to increase little by little, extending itself from the foot of the mountain to the top, its appearance being most imposing on account of the whiteness of the sandstone and the absence of all earth and vegetation" (G. Schultz).

**FRÉJOL**, *see* *frijol*.

**FRENERO**, brakesman, *syn.* Mex. *garrotero*, *guardafrenos*, Sp. Am. *retranquero*, equiv. Fr. *serre-frein*, Ger. *Bremser*.

**FRENO**, (1) bridle, or bit of the bridle ; (2) hoist. brake, *syn.* Mex. *garrote*, Span. Am. *retranca* (2), equiv. Fr. *frein*, Ger. *Bremse* ; f. *de cinta*, band-brake, or ordinary brake ; f. *de seguridad*, safety-brake ; *see* *zapato* (2) ; (3) *frenos*, Palencia, Sp. c.m. horizontal posts used in supporting the salient angles of the coal in overhand stoping (Molina), *comp.* *estemple*.

**FRENTE** (forehead, front), (1) fore-breast or end, *syn.* f. *de ataque* or *de arranque*, *see* *frontón* (1) ; (2) f. *de guía*, Mex. main or guiding level

in a mine (Dwight) ; (3) Ant. Col. alluv. m. the vertical cut [*barranco* (2)] where the gold-washing *barredura* (1)] is concluded ; (4) Ant. Col. vertical cut made in a vein, *see* *afrentar un hilo*.

**FRETERO**, miner or *peon* who works in the fore-breast or face [*frente* (1)].

**FREO** (naut. narrow channel), prov. gorge, canyon, ravine, between mountains (Velázquez), *see* *barranca* (2).

**FRESNO**, ash-tree.

**FRICACIÓN, FRICCIÓN**, friction, *syn.* *frotación* (1), *roce*, *rozadura* (1), *rozamiento* (1), *see u.* *engranaje*, *manguito* (2) and *rodillo*.

**FRÍJOL** (*fréjol*, *frísol*), kidney bean ; *piedra de f.* ("bean-rock"), Guan. Mex. miner's name for the red conglomerate, *see u.* *conglomerado*, *comp.* *frijolillo*, *frísol*.

**FRIJOLILLO**, Guan. Mex. round fragments of limestone and calcareous cement, a conglomerate, *see* *conglomerado*.

**FRÍO, ÍA**, adj. cold, (1) Mex. in the *patio* process, what is known as *frío* is characterised by the yellow and sometimes black colour of the quicksilver, due to insufficient strength of the cuprous solution to produce the sulphuric acid, with which the oxide of mercury must combine—to remedy the defect more bluestone must be added (M. V. Ortega), *see u.* *curtir*, *enfriar*, *u.* *torta* ; (2) *metales fríos*, Chile, smelting ores, or ores not suitable for the amalgamating process, and which are met with at a depth of from 80 to 150 m. ; when sulphides predominate = *mulatos* ; if complex, *e.g.*, sulpho-arseniates and antimoniates = *negrillos* (1), *see* *plata* (2), *comp. u.* *cálido*, *da* ; (3) *arenas frías*, Ant. Col. alluv. m. the poorest sands forming irregular deposits upon or among the pay-dirt [*cinta* (3)], *see u.* *desarenar*, *hervezón* (1).

**FRÍOS**, Mex. in the *patio* process, *negros*, or ores containing no decomposed metallic substances ; they are pyritic and leady, or consist of ruby silver (Hermosa), *comp.* *calientes*.

**FRISADA**, Mex. a woollen covering used by the *tenatero*, to prevent his shoulders from being hurt, *see* *vestido*.

**FRÍSOL** (*see* *fríjol*), Ant. Col. any stone, polished by water, and imitating the form of a kidney bean (*judía*) ; it is an almost inseparable accompaniment of gold (Uribe), *comp.* *mulata*.

**FRISOLITO**, *see u.* *mulata*.

**FRONTERA**, frontier.

**FRONTÓN**, (1) m.m. fore-breast or end, c.m. face or breast, U.S.A. front, *syn.* *cabo* (7), *culata* (2), *extremidad*, *frente* (1), *rampa* (1), *raya* (1), *testera* or *testero* (2), equiv. Fr. *front de taille*, *front de galerie*, Ger. Ort, Stollnort, Ortsstoss, *see* *fim*, *comp.* *levante* ; (2) level or gallery, *see* *galería* ; (3) top. cliff, bluff (Ponce de León), *see* *precipicio*.

**FROTACIÓN, FROTADURA, FROTAMIENTO, FROTE**, (1) friction, *see* *fricción* ; (2) attrition, *see* *atrición*.

**FRUTA** (fruit), f. de *mono*, Ant. Col. a cup of a semi-elliptical form cut from the hard resisting fruit of this name, of variable capacity, and

- used by gold-washers (*zambullidores*) in the same way as the *coco* (Uribe).
- FRUTOS**, (1) produce, product or yield, *see* *producto* ; (2) ore, *see* *metal* (3) ; *veta en frutos*, Mex. vein carrying pay-ore.
- FUEGO** (fire), (1) *dar f. al barreno*, to blast, *see* *tirar* ; (2) *bomba de f.*, steam-pump, *see* *bomba* (1) ; (3) *metales de f.*, smelting ores, *syn.* *metales de fundición* ; (4) hearth, fireplace, *see* *hogar* (1).
- FUELLE**, (1) bellows ; in Mex. bellows are used in the *fundición* of the patio process, and also for sharpening bars and picks, *see* *abanador*, *barquín*, *güijola*, *mozo* (2), *pava* (1) ; *f. de cuero*, *f. barquín*, leather bellows ; (2) *fuelles-pistones*, double-acting force-pumps, made of leather (Ramirez), *see* *bomba* (1) ; (3) *f. de válvulas*, mine ventilator (Ponce de León).
- FUENTE** (fountain), spring of water, *see* *manantial* ; *f. burga* or *carga*, boiling spring (Ponce de León), *see* *burga*.
- FUERA**, adv. out ; *f. de juego*, mech. out of gear (Ponce de León).
- FUERO**, (1) statute law of a country ; (2) jurisdiction, judicial power ; (3) a compilation of laws, *comp. código*.
- FUERTE**, adj. strong, applied to amalgam which is too hard and needs more mercury, *comp. débil* ; blast. applied to a powerful explosive, *comp. u. flojo*, *ja*.
- FUERZA** (force, strength), mech. power, force ; resistance due to friction, etc. ; *f. bruta*, gross power ; *f. de agua*, water power ; *f. de caballo*, horse power ; *f. de flexión*, bending strain ; *f. de sangre*, animal power (Mex. mule power) ; *f. electromotriz*, electromotive force ; *f. motriz*, motive power ; *f. nominal*, nominal h.p., *see* *caballo* (1).
- FULGURACIÓN**, *f. de la plata*, met. "brightening" of the silver.
- FULMINANTE**, detonator or blasting-cap, *see* *cápsula*.
- FUMOROLAS**, geol. fumaroles of fissures about a volcano or a volcanic region, giving out spent vapours, etc., the greater number of which open upward into the air, but some into cavernous places in the crater or in lava-streams (James D. Dana).
- FUNCIONAR**, to work (of a pump, etc.).
- FUNDACIÓN**, foundation, *see* *fundamento*.
- FUNDAMENTAL**, adj. *piedra f.*, foundation stone, *syn.* *piedra grani-gorda*, *piedra pérdida*.
- FUNDAMENTALES**, *Almñaden*, Sp. an arch (*arco*) of brick for supporting excavations normal to the deposit ; the chord is normal to the walls, the segment is usually 1 by 100 of the chord, and the thickness is constantly 0.836 m. ; the lower buttress or impost [*rafa* (1)] is opened on the footwall, and the upper one [*cabeceadero* (2)] on the hanging wall (Molina).
- FUNDAMENTO**, foundation, *syn.* *cimiento* (1), *fundación*.
- FUNDENTE**, met. fusing ore, flux, *see* *castina*, *flujo*, *liga* (4), *magistral*, *metal de ayuda* (1).



**FUNDICIÓN** (Port. fundição), (1) Mex. the process of melting burned silver into bars (G. F. Lyon) ; (2) **sistema de f. or por vía seca**, smelting process ; **f. en crudo**, smelting direct or without a preliminary calcination or roasting ; (3) smelting-house, foundry or assay-offices, *see u. casa, ferrería* (2), *comp. ingenio* (3), **fuslina** ; (4) casting ; (5) **metales de f.**, *see fuego* (3) ; (6) **f. gris**, foundry pig- or cast-iron (Ponce de León).

**FUNDIDOR**, smelter, founder, melter.

**FUNDIR**, to melt, smelt, or cast metals ; **f. en crudo**, *see u. fundición*.

**FUNDO**, leg. hereditament ; **f. minero**, Mex. all the **pertenencias** embraced under one title (Dwight).

**FUQUE**, Mex. deepest point of excavation (Dwight).

**FURGÓN**, (covered) freight or box-car, G. Brit. goods-wagon.

**FUSIL**, gun ; **piedra de f.**, flint (**pedernal**).

**FUSIÓN**, fusion, liquation, melting.

**FUSLINA**, smelting-works (Velázquez), *comp. fundición* (3).

**FUSLOR**, smelting-ladle, a vessel for melting (Velázquez).

**FUSTINA**, place for fusing metals (Velázquez).

**GABARRA**, lighter, barge, *see lanchón*.

**GABARRO**, any fragment of rock or ore, either loose or occurring as a nodule [**nódulo** (1)] ; **metal g.**, large ore, coarse ore, from the size of an egg to that of an orange [*see broza* (3)] ; first-class ore ; large piece of slag, *comp. engabarrado*.

**GABELA**, tax or duty paid to government, *see derecho* (2).

**GACHUPÍN** (Cachupín), Mex. a native of Spain, *syn.* Lima, Peru, **Chape-tón**, Buenos Ayres, Arg. **Maturrango** (Velázquez).

**GAFA**, *see u. careta*.

**GAJO**, (1) branch of a tree, *see rama* (1) ; (2) chain (**cordillera**) of hills proceeding from a principal mountain (Acad.).

**GALÁPAGO**, (1) saddle (English type), *see silla* (1) ; (2) timb. head-piece, head-board, (Australia) heading or strap, lid, wall-piece, *syn. zapata*, *comp. bantrote, marranillo* ; (3) pig of copper, lead, or tin, *see lingote* ; (4) small frame or **cimbra** (1).

**GALEMADOR**, (1) Peru, small furnace [**horno** (2)] for roasting silver ores ; (2) Mex. silver smelting-furnace [**horno** (2)].

**GALEMAR**, to reduce ores in a Mexican furnace (Dwight).

**GALEME**, Mex. (1) cupelling-furnace [**horno** (2)] with absorbent hearth, *syn. chacuaco* (2) ; (2) smelting-furnace [**horno** (2)] in which the **buscones** and **poquiteros** reduce from 1 to 3 **arrobas** of ore (Ramirez) ; (3) reverberatory furnace [**horno** (2)], *syn. cendradilla* ; for **piedra de barilla**, used in construction of above furnaces, *see u. piedra*.

**GALENA**, galena, *syn.* alcohol (1), **alquifol** (1), Peru, **espejado**, Potosí, Bol. **liga** (2), Mex. **plomo** (2), *see acerillo, azules* (4), **carne de vaca** (1), **chini-liga**, **espejuelo** (5), **mole** (1), *u. soroche* (2).

**GALEÓN**, a galleon or armed Spanish ship, from 400 to 700 tons burden, that used to carry silver, etc. from New Spain (Antillas) to Cadiz.

**GALERA**, (1) Mex. the long shed on each side of the patio (1), *comp.* rancho (3); (2) storeroom for ordinary ores, *see u.* despesa (3); (3) grinding-mill or mill-house; **g. de la amalgamación**=patio (1) roofed in, *see* molino (1); (4) *see* barraca; (5) carp. a large jack-plane (garlopa); (6) a kind of irregular ore-deposit, *see* galerón, masa (3); (7) furnace [horno (2)] for distilling sulphur; a row of reverberatory furnaces, containing various retorts, all heated by the same fire (Acad.); (8) wagon, a heavy covered carriage for burdens (Velázquez), *comp.* carro (1).

**GALERÍA**, (1) gallery, level, *syn.* camino (3), obs. caño (4), cañón (2), Peru and Bol. chingana, frontón (2), Col. guía (9), nivel (3), piso (1), planta (1), vía de comunicación, equiv. Ouro Preto, Braz. cabeceira (2) Fr. galerie, Ger. Strecke, Austria and Hungary, Lauf, *see* barreta (4), caña (2), carrera (9), chiflón (4), chile (3), chimenea (5), contracañón, hurto, manga (3), media luna (*u.* medio, dia), méquines (1), pasillo, plan (1), ramal (2), real (2), realce (1), socavón (2), testera (5), trancada (2), vertiente (5); **g. auxiliar**, Huelva, Sp. auxiliary gallery, running parallel to the main gallery, the two forming twin-galleries (galerías gemelas); **g. de avance**, **g. de dirección**, heading or gallery following the strike of the deposit, *syn.* Linares, Sp. testera (5) de guía; **g. de desagüe**, adit, *see* socavón (1); **g. de disfrute**, *see u.* faja (3); **g. de fondo**, **g. fundamental**, **g. general**, **g. maestra**, **g. principal**, **g. sobre el filón**, main gallery, *syn.* salt mines, Pozo, Burgos, Sp. paso real (as distinguished from the others or pasos laterales); **g. de roca**, Peru, cross-cut [crucero (1)] or adit [socavón (1)] driven in country; **g. de rodaje**, rolley-way; **g. de ventilación**, air-way; **g. intermedia**, intermediate gallery, *see* zapa; **galería trancada**, *see* trancada (2); **galerías, apiques y travesías**, c.m. post and stall, *syn.* galerías y pilares; **galerías gemelas**, twin-galleries, a pair of main roadways; (2) Bilbao, Sp. a var. of hematite, *see* vena (2).

**GALERÓN**, a kind of irregular deposit of large size, *see* galera (6), masa (3).

**GALGAS**, (1) the uprights (pies derechos) supporting the barrel [árbol (2)] of a windlass, *see* torno (2); some consist of two inclined timbers, the upper parts of which rest on the walls of the excavation (Acad.); (2) torno de g., *see u.* torno (2).

**GÁLIBO**, rail. iron rule [cercho (1)], in the form of an inverted U, used for ascertaining if wagons, with their maximum load, can pass through tunnels, etc. (Acad.).

**GALLEO**, met. inequalities formed in the surface of certain metals when cooled rapidly, after melting, when, the crust breaking, the interior mass escapes (Acad.), *see* gallo (4).

**GALLERA** (Phil. cock-pit), Ant. Col. round-buddle, *see* gandinguera.

**GALLETAS**, small nuts (coal), *see u.* carbón (2).

**GALLINAZO**, (1) Titiribí, Ant. Col. blende (M. U. Angel), *see* **blenda** ; (2) Ant. Col. (generally), spout conducting water to an overshot wheel.

**GALLO**, (1) *pie de g.*, Mex. diagonal brace, *see u. diagonal* ; (2) **gallos**, Mex. rich ore with needles or grains of gold and silver (Gamboa), *see u. pinta* (1) ; (3) **gallos**, Mex. small particles of silver which appear in the shape of spherules on the surface of certain ores after strongly heating them (M. J. Gloss.) ; (4) **gallos**, Mex. the spurting out of the silver from the assay button on cooling (M. J. Gloss.), *see galleo* ; (5) Mex. lump of native metal or nugget, *see pepita* ; a **gallo** of silver from Batopilas, Chihuahua, in 1883, weighed 318 marcos and was valued at \$2862 (Ramirez) ; (6) carp. ridge-pole, *see hilera* (3).

**GALÓN**, gallon (Engl. liquid measure).

**GAMBUCINO**, (1) a prospector or searcher for gold, *see buscones* (1), *cotense* (2), *u. sábado* ; (2) tributer, *see campista*.

**GAMELA**, kind of basket, pannier or hamper, *see canasta*.

**GAMELLA**, (1) yoke for oxen or mules ; (2) a large wooden trough or bowl for panning out gold ; Braz. a wooden bowl, made of the wood of the fig-tree (*gamelleira*), about 2 feet wide at the mouth, and 5 or 6 inches deep, used for washing gold out of the auriferous matter collected in sluices or in river sands (Spix and Martius), *comp. ábaco, artesa, artesón, batea, capitana* (2), *cargadora, dornajo, maestro* (2), *noque* (2).

**GAMELO**, *see copaiba* (2).

**GAMUZA**, chamois leather, used in the *incorporo* (patio process), *see also soche*.

**GANANCIA**, profit, *syn. provecho, utilidad*.

**GANCHO**, (1) hook, transp. hook for attaching two wagons ; hook with a long handle, used by on-setter (*enganchador*) ; *g. de cadena*, chain-hook ; hoist. *g. de seguridad*, safety-hook ; *g. de resorte*, spring hook (ordinary safety-hook), (U.S.A.) snap-hook ; *g. de serpentina*, serpentine hook ; *see abrazador, garabato, garfio, grampa, grillete, laña* (2), *paleta* (4), *tímon* ; (2) bor. crow's foot, *see caracol* ; (3) *g. ensanchador*, bor. a hook for extracting tubes ; (4) met. dog used for extracting tapping-bars from furnace (Dwight) ; (5) small and light pick [*pico* (2)] with a very long handle (*Ezquerria*) ; (6) **ganchos**, native silver in the form of hooks.

**GANDINGAS**, (1) S. Sp. mech. prep. fines concentrated on a round-buddle, concentrates, *see marmaja* (2) ; Sierre de Cartagena, all material jigged from 1 mm. to the finest powder, *comp. u. granza*, and *garbillo* (3) ; (2) *see u. vacisco*.

**GANDINGUERA**, S. Sp. (1) round-buddle, *syn. chapola*, Ant. Col. *gallera, mesa cónica fija* or *redonda* [*u. mesa* (1)], Almería and Cartagena, Sp. *rumbo* (4) ; (2) German buddle, *see gandinguero*.

**GANDINGUERO**, Cauca, Col. buddling-table or flat-buddle, *syn. gandin-guera* (2), *comp. cernidor* (2), *u. concentrador, planilla*.

**GANGA**, gangue or matrix, *see matriz* (1), *u. meter*.



- GARABATO**, a curved iron bar used in smelting silver ores, etc., or used by *enganchador*, etc., *see u. gancho* (1); suspension hook of a mine-lamp (*lámpara*), *syn. gancho* (1).
- GARBILLAR**, mech. prep. to concentrate with the *garbillo* (1).
- GARBILLO**, (1) Sierras de Gador y de Cartagena, Sp. hand-sieve, made of a curved wooden hoop, the sides of *esparto*, and the bottom of canvas, used for dry concentration (*Moncada*), *see u. andaluces, embaste*; (2) rectangular or square wire sieve, used for screening *tierras* (4); (3) *garbillos*, Sierra de Cartagena, Sp. mech. prep. products of jiggling from 1 mm. to 1 cm. (*Moncada*), *comp. gandingas* (1), *u. granza*.
- GARDUJA**, Almaden, Sp. barren stones containing no quicksilver, *see estéril* (2).
- GARFIO**, (gaff) hoist. the bent end of a hook [*gancho* (1)]; met. drag-hook.
- GARGANTA** (throat), (1) *g. de polea*, pulley-groove, *syn. canal* (3), equiv. Fr. *gorge*; (2) mech. collar (collar) or neck, *see u. válvula*; (3) mountain flood, torrent; (4) top. narrow pass, *see paso* (4); narrow part of rivers, etc.; (5) *g. de lobo*, *see ajuste de trasdós* [*u. ajuste* (3)].
- GARIMPEIRO**, Braz. (1) a gold-seeker (*Lock*), *comp. buscones* (1); (2) illicit diamond buyer (*Bauer*).
- GARITERO**, Ant. Col. *peon* who assists in the mine-kitchens, *comp. sangrero*.
- GARLANCHA**, *see u. garlanjeros, comp. hurga*.
- GARLANCHEROS**, Remedios, Ant. Col. men who pass ore down the shoots, using a two-pronged tool with a handle of wood (*garlancha*).
- GARLOPA**, bench-plane, *syn. cepillo de banco*; *g. de alisar*, jack-plane, *see galera* (5).
- GARNIEL** (*guarniel*), *see carriel*.
- GARRA**, mech. claw, catch, clutch; *garras*, hoist. claws of safety-appliances, *see paracaídas* (1); *g. de cangrejo*, catch-block (of Corliss valves), equiv. Fr. *pince d'écrevisse*.
- GARRAPATA**, Mex. clamp [*grapa* (2)] for stretching wires (*Dwight*).
- GARROTE**, Mex. hoist. a brake, *see freno* (2).
- GARROTERO**, Mex. brakeman, *see frenero*.
- GARRUCHA**, (1) pulley, *see polea* (2); *g. combinada*, fija, movable, simple, combined, fixed, movable or single pulley of tackle [*aparejo* (1)].
- GAS**, gas; *g. de las hulleras*, *see grisú*; *g. de pantanos*, *see u. hidrógeno*.
- GASTAR**, geol. to erode, *syn. roer, see erosión*.
- GASTO**, (1) expenditure, cost, *see consumo, costo* (2); (2) *gastos*, expenses, outlay; (3) the quantity of water which a spring will yield in a given time; (4) vent. volume of air introduced in one second; (5) wear, *see desgaste*.
- GATA**, a toothed bar from which is suspended the flood-gate [*compuerta* (2)] of a dam (*Velázquez*).
- GATILLO**, (1) trigger of a *pistolete de seguridad*, etc.; (2) cramp-iron, *see gato* (2).

**GATO**, (1) jack-screw, *see* **cric**, **diablo** (3), **tornillo** (2); (2) cramp or cramp-iron, *syn.* **gatillo** (2), **grapa** (1), **laña** (1), **plancha** (9), *see* **alma** (4), *comp.* **corchete** (1); (3) Mex. rail-bender, *see* **diablo** (1).

**GAUCHO**, Arg. and Uruguay, Indian of the pampas, herdsman.

**GAVIA**, Las Alpujarras, Sp. a primitive method of carrying ore in baskets on men's shoulders up inclined shafts having long steps (**trancos**) cut in the side (Gillman); group of ore-bearers, each component being called **muchacho de gavia** (Molina); "cuadrilla de operarios que se emplea en el trecheo" (Acad.), *see* **carrera** (9), *u.* **paseo**, **trancada**, **vasija**, *comp.* **cuerda** (4), **talla** (3), **trocar**, **zagalones**; **operario de g.** = **portador**.

**GELATINA EXPLOSIVA**, *see* **dinamita goma**.

**GEMELO**, LA, adj. **cilindros gemelos**, twin-cylinders; **motor gemelo**, twin-motor; *see u.* **bomba** (1), **chimenea** (3).

**GENERADOR**, generator; **g. eléctrico**, electric generator; **g. de vapor**, steam generator, *see* **generatriz**.

**GENERATRIZ**, máquina g., el. generator, dynamo, *comp.* **receptora**.

**GÉNESIS**, genesis, origin (of ore deposits), *see* **criadero** (1).

**GEODA**, (1) geode, or rounded nodule [**nódulo** (1)] containing a small cavity, usually lined with crystals; (2) vug, *see* **drusa**.

**GEOMETRÍA SUBTERRÁNEA**, obs. mine surveying, *see u.* **agrimensura**.

**GEÓMETRO**, surveyor, *see* **agrimensor**.

**GERENTE**, com. manager, business manager, *comp.* **superintendente**.

**GIGANTE** (giant), hydr. m. monitor, *syn.* **hidrolanza**, *see* **pistón** (2).

**GIRASOL** (sun-flower), fire-opal, *syn.* **g. de fuego**, **ópalo de fuego**.

**GIRO**, com. draft, *see u.* **libranza**.

**GLANDULA**, pump. gland or cover of a stuffing-box.

**GLAUCONIA**, glauconite; the name of a green silicate of iron more or less abundant in "green sand."

**GLEBA**, Alicante, Sp. (salt-works) thin layer (**plancha**) of precipitated salt, *see* **paleta** (4), **volvedor**.

**GOA**, pig-iron, *see u.* **hierro** (1).

**GOGO**, Phil. a plant whose juice is said to catch fine gold (Lock), *comp.* **itambamba**.

**GOLPE**, (1) Mex. sledge-hammer, *see* **maza** (3); (2) mech. prep. small hammer (**martillo**) used in cobbing, *syn.* **pico** (4), *comp.* **quebrador** (2); (3) stroke of a piston or pump, *see* **pistonada**; (4) lift of a hammer, drop of a stamp, *see* **caída** (1); (5) **g. de ariete**, pump. water-hammer, *see* **choque**; (6) **g. de agua**, abundance of water.

**GOLPEADOR**, Mex. blast. the striker; he generally charges the drill-hole and is then the **cohetero**, *see u.* **pico** (3).

**GOMA**, gum; **g. elástica**, india-rubber, *see* **caucho**; **g. grisú**, grisoutite or dynamite mixed with sulphate of magnesia (Molina).

**GONGORA**, Col. cavity or vug in a lode, *see* **drusa**.

**GONGORADO**, DA, adj. mineral **gongorado**, Col. ore containing vugs, *see* **gongora**.

**GOPIARAS**, *see* grupiaras.

**GORDO, DA**, adj. sal gorda, *see u.* sal (1) ; *see u.* tabla (1).

**GORFE**, a deep hole in a river forming a whirlpool or eddy (Velázquez), *comp.* charco (3).

**GORGUERA**, blast. felt, straw or esparto guard at the mouth of the borehole to prevent water splashing against the borer.

**GORGULHO**, *see* gurgulho.

**GORRA** (cap, bonnet), (1) Mex. miner's hat of felt, stiffened with pitch, *see u.* vestido ; (2) g. de metal, bonnet of a safety-lamp (lámpara), bonnet of a cage [cubierta (2)], etc.

**GORRÓN**, (1) spindle or pivot at the end of a vertical axle [eje (2)] ; pivot of the tree [arbol (3)] of a horse-whim, *syn.* pivote (2), varilla (3) ; (2) a round smooth pebble, *see* guijarro (1).

**GORRONAL**, *see* guijarral.

**GOTA** (drop), (1) g. de sebo, rounded ends of bolts, nuts, etc., (2) small portion of bar of bullion, etc. for assaying ; (3) a var. of topaz called "water-drop" (Velázquez), *see* topacio (1).

**GOTEAR**, to leak.

**GOTEO**, leakage.

**GOTERA**, (1) leak ; (2) stretcher, *see* camilla.

**GOZNE**, (1) hinge, *see* bisagra, *u.* unión ; (2) staple, *see* cerradero (1).

**GRADA**, (1) step of a staircase, *syn.* grado, *comp.* escalón (1) ; (2) a single stope, *syn.* Vizcaya, Sp. altar (2), gradín, Ant. Col. corte (8), escalón (2) ; g. al revés (Fr. gradín renversé), g. invertido, overhand stope, *see* testero (3) ; g. derecha (Fr. gradin droit), g. recta, underhand stope, *syn.* Mex. desborde, *see* rebajo (2).

**GRADERÍA** (series of steps), *see* terraplén (1).

**GRADILLA**, step-ladder, *see u.* escala (1).

**GRADÍN** (Fr. gradin), stope, *see* grada (2).

**GRADINO**, chisel, an edged tool used by stone-cutters, *see* cincel (1).

**GRADO**, (1) step of a staircase, *see* grada (1) ; (2) surv. degree.

**GRADUADOR**, Mex. manometer for measuring blast of air.

**GRAFITO**, graphite or plumbago, *syn.* alquifol (2), carbón (4), chacal, lápiz (1), lápiz plomo, mina de plomo, plumbagina, piedra mineral de plomo.

**GRAFÓMETRO**, surv. circumferentor, *comp.* plancheta.

**GRAMEAR**, S. Am. to triturate the ore (Ponce de León).

**GRAMPA**, hook, *see* gancho (1).

**GRANADA**, (1) pomegranate, *see u.* se abre ; (2) garnet, *see* granate (1).

**GRANADILLO**, (1) mech. prep. grain, *syn.* granado, grano (1), granito (3), *comp.* granalla ; (2) Col. tree, furnishing wood for making cabinets, etc.

**GRANADINO, NA**, adj. native of or belonging to the Republic of Colombia (formerly New Granada) ; 1 legua g. = 5 km. or 5000 m. or 62½ cuerdas of 100 varas each ; 1 libra g. = 500 g. ; 1 onza g. = 31.25 g. ; 1 arroba g. = 12.5 kg. ; for tonelada g., *see u.* tonelada.



**GRANADO**, (1) *see* **granadillo** (1); (2) Gerona, Sp. coal 20-40 mm. the rest is **menudo** (small); (3) Hualgáyoc, Peru, ore the size of a walnut (Santo'alla), *see also* **ñuzco** and **pachapampa**.

**GRANALLA**, grains of metal, *comp.* **granadillo** (1); small grains or filings (**limaduras**) of gold that assayers and goldsmiths put in the purifying composition (**cimiento real**) in order to fine it more easily (Uribe); Col. grains of melted gold found in the Indian graves, *see* **guaza** (1).

**GRANATE**, (1) garnet, *syn.* **granada** (2); **almandina** or **g. almandino**, **almandite**, an iron alumina-garnet, *syn.* **g. común** (opaque), **g. noble**, **g. oriental**, **g. precioso**, **g. sírio** (transparent); **g. de hierro**, iron-garnet; **g. de cromo**, chrome-garnet; **pedra de canelo** = cinnamon stone, a var. of lime alumina-garnet or grossularite, *see* **jacinto** (2); for magnesia alumina-garnet, *see* **piropo**; (2) Guadalcázar, S. L. Pot. Mex. crystallised cinnabar, *see* **mercurio** (2), *comp.* **bermellón**, **negro** (2).

**GRANCEADOR, RA**, adj. **molino granceador**, grinding-mill, as Blake's ore-crusher, Chilean mill, etc.

**GRANCEO**, Mex. operation of reducing ore to the size of **granza** (1), or to fragments about the size of a pea, more or less, and effected by stamps, crusher or Chilean mill (Ramirez); the crushing is usually dry and is followed by the **molienda** (1), *see* **pulverización**, *comp.* **porfirización**.

**GRANCERAS**, Guan. and Real del Monte, Mex. women who separate **granzas** (1) and **guija** (2) without **pinta**.

**GRANCERO**, Mex. place, house or bin, where the **granzas** are kept, *syn.* **rezago** (3).

**GRANCILLA**, Villanueva del Rio, Sevilla, Sp. fine coal from 15-30 mm. (Molina), *comp.* **cribado** (2), *u.* **grueso** (2).

**GRANDE**, adj. great; **grandes cámaras**, bell-pits, *see* **botella** (2); **grandes tajos** (Fr. **grandes tailles**) or **método de ensanche**; **grandes tajos ascendentes** = Fr. **grandes tailles montantes**; **grandes tajos según la dirección** = Fr. **grandes tailles chassantes**; **grandes tajos diagonales** = Fr. **grandes tailles diagonales**, *see* **tajo** (2).

**GRANIGORDA**, *see u.* **fundamental** (1).

**GRANITO**, (1) granite, *see* **ala** (4) **de mosca**, **berroqueña**, **huevo** (2), **maní** (1) and (2), **pedra de remendar** (*u.* **pedra**), **tosca** (5), **tucurababi**; (2) hairs, streaks or points which diminish the brilliancy and price of diamonds (Velázquez); (3) **granitos**, little grains, *see* **granadillo** (1).

**GRANO**, (1) a grain, *see* **granadillo** (1); **granos de oro**, grains of gold, small nuggets, *see* **pepita**; (2) the grain of wood; (3) grain, a weight, *see u.* **quilate**.

**GRANZA**, (1) Mex. mech. prep. originally, in the **patio** process, ore which had passed through holes in a sieve of hide, this was pulverised in the **arrastre** (3) or **tahona**; fragments of ore about the size of a pea [*see* **granceo**, *comp.* **cabezuela** (2)], but may include ore from the size of rice to that of a hen's egg; in Pachuca, ore which remains on sieves of

- $\frac{3}{4}$  of an inch mesh, that which passes being called **tierras** (4); coarse sand crushed dry from the stamping-mill and generally poor; **granza** and **tierras ordinarias** from the Veta Madre of Guanajuato form the fourth class of ore, and yield about 80 ounces of silver per ton; *comp.* **apolvillado**; *g. de yunque*, San Dimas, Dur. Mex. third-class ore or smalls from the cleaner, *see u. metal* (3) and **tierras** (4) for first, second and fourth classes; fragments resulting from cobbing the ore (Dahlgren), *syn.* **tierras de labor** or **de yunque**; Huitzuco, Guerr. middlings or chips of mercury ore (limestone with livingstonite) broken off when smashing up large pieces of ore with a sledge-hammer, it contains about 1 per cent. of quicksilver, *comp. u. despoblado*, *da*, **pepena** (1) and **tierras** (4); Guadalcázar, S. L. Pot., coarse ore; **granzas**, Sp. all materials, which, after trituration, fail to pass through holes of 3 mm. diameter (Ibran), *comp. u. arena* (2) and **polvo**; Sierra de Cartagena, Sp. in jigging, products larger than 1 cm. (Moncada), *syn.* **gravas**, *comp. gandingas* (1), **garbillo** (3), **granzón** (1); (2) dross of metals, *see espuma* (8).
- GRANZEAR**, Mex. to break up ore into fine powder by two large stones (G. F. Lyon), *comp. moler á mano*.
- GRANZITA**, Almaden, Sp. coarse-grained ores, of from 1·2 to 3·2 cubic inches, *comp. u. tierras* (4).
- GRANZÓN**, (1) mech. prep. fragment of ore which does not pass through the screen (Acad.); **granzones**, screenings, *comp. granza* (1); Mex. coarse particles obtained by sifting **tierras** (4), they are ground down by the **voladoras** (3) in order to remove the asperities of the bottom of the **arrastre** (3); this operation succeeds that of **asentar** (4) **el arrastre**, and is followed by the grinding of the **granza** (1); (2) Venez. pisolitic brown hematite (C. Le Neve Foster), *see hematita*.
- GRAPA**, (1) cramp-iron, *see gato* (2); (2) carp. clamp, *see garrapata*; (3) bor. lifting-dog, *see u. llave* (1); (4) hoist. in capping, a socket for embracing the loop of a wire-rope.
- GRAPÍN**, aug. of **grapa**.
- GRASA**, slag, *see escoria* (1); Mex. slag or clinker which is separated from the metal when tapped into the basin [**pileta** (2)] from the smelting furnace. This sets at liberty the particles of lead (Gamboa).
- GRASERO**, slag-dump, slag-pile, *syn. escorial*.
- GRASO**, SA, adj. unctuous; **cuarzo graso**, greasy quartz, *see u. rayado* (2); **tierra grasa**, pipe-clay; **hulla grasa**, fat-coal, *see u. hulla* (2).
- GRATIFICACIÓN**, reward, gratuity paid to miners, etc., *see premio* (1), **regalo**.
- GRAVA**, *see cascajo* (1); *g. arcillosa*, loam; **gravas**, *see u. granza* (1).
- GRAVAMENES**, Mex. encumbrances, or charges on a mine from **avio** or other contracts.
- GRECAS** (Grecian frets in arch.), confused irregular workings, *syn. laberintos* (2).
- GREDA**, (1) fuller's-earth—a soft friable clay which absorbs grease, used

by fullers, *syn.* **greta** (1), **jaboncillo** (2), **tierra** (2) **de batanero**, **de batán** or **de manchas**; (2) **marl**, *see* **marga** (1); (3) **chalk**, *see* **creta**; (4) **El Caratal**, Venez. alluv. m. pay-dirt (Fig. 20 f) or yellow ferruginous clay covering **cascajo** (2), *see* **cinta** (3); plastic clay or **barro** (1); kaolin-like clay, *e.g.*, **Sierra Moreno**, Sp. "in the granite, which is rich in felspar, the veins are filled with kaolin-like masses known as **gredas**" (A. O. Wittelsbach); (5) **g. dura**, **Titiribí** and **Heliconia**, Ant. Col. carboniferous schist (**esquisto**); it contains globular pieces of iron ore; (6) **oro greda**, Venez. alluvial gold, *see u.* **oro**.

**GREDAL**, adj. geol. of the nature of fuller's-earth, or containing fuller's-earth; place abounding in **greda** (1) (2) or (3).

**GREDOSE, SA**, adj. marly; containing fuller's-earth; **tierra gredosa**, clay-marl (1). NOTE.—Sometimes = clayey.

**GRELLA**, grate; **g. móvil**, **g. de vaivén**, mech. prep. shaking grate; **g. para deslodar minerales**, mech. prep. grizzly (Venator), *see* **parrilla** (2).

**GREMIO**, society, guild, corporation; **g. de mineros**, Peru, association of miners originally founded by the Spanish Crown.

**GRES**, generic name for rocks of a granular texture, *e.g.*, sandstone, *see* **arenisca**.

**GRETA**, (1) fuller's-earth, *see* **greda** (1); (2) Mex. impure litharge formed in a reverberatory furnace, *see* **litargirio**.

**GRETA**, Port. fissure (Span. **grieta**), *see* **hendedura**.

**GRETOSES, Chico**, Hid. Mex. silver-bearing sulphides occurring in gossan (A. del M. de F.).

**GRIETA**, (Port. **greta**), geol. narrow fissure, more or less long and deep, which may be formed naturally in fissile rocks (Guim), *see* **hendedura**, **labio** (2).

**GRIETARSE**, to crack in the form of a star, said of ingots or metal plates (Velázquez).

**GRIETEO**, formation of fissures (Venator), equiv. Ger. **Spattenbildung**.

**GRIFO, GRIFÓN**, stop-cock for water; faucet, spigot.

**GRILLETE**, hoist. shackle, or U-shaped hook fastened by a bolt and nut, *see* **gancho** (1).

**GRIS**, adj. grey; for **plata g.**, *see u.* **plata** (2).

**GRISOLITAS**, Braz. chrysolite.

**GRISÚ**, (Fr. **grisou**), fire-damp, *syn.* **aire** (2), **gas de las hulleras**, Mex. **toro**, equiv. Ger. **Grubenfeuer**, **Grubenluft**, *comp.* **hidrógeno proto-carbonado**, **mofeta**; **mina con g.**, fiery mine.

**GRISUMETRO** (Fr. **grisoumetre**), fire-damp measurer.

**GRÚA**, mech. crane, *syn.* **cabria** (4), **pescante** (1), **trucha**, equiv. Fr. **grue**, Ger. **Krahn**, *see* **abanico** (1), **aguilón**, *u.* **árbol** (3), *u.* **castillete** (1).

**GRUESO, SA**, adj. thick, bulky; **canalón** (2) **grueso**, Ant. Col. ground sluice with a considerable thickness of sand and stone covering the bed-rock, *see* **colgar** (2); coarse (of mineral, etc.).

**GRUESO**, (1) thickness (of a bed or vein), *see* **anchura**; (2) Villanueva del Río, Sevilla, Sp. large coal 600 mm. in size, *comp.* **cribado** (2),



**grancilla** ; in the quicksilver mines of California, U.S.A. **grueso** = lump ore, *comp. finos*.

**GRUMO**, *see u. sal*.

**GRUPIARAS**, Minas Geraes, Braz. higher bench deposits or placers (*see* placer) on the slopes of hills, due to the erosive action of water, and the precipitation of materials transported in geological periods more remote than the **taboleiros**, *syn. gopiaras, guapiaras, gupiaras* ; according to Bauer, valley-deposits formed of the same material as river-deposits, sometimes constituting river-terraces, *see cascalho, gurgulho comp. veias* (2).

**GRUPO**, a group of deposits, *syn. haz* (2).

**GRUTA**, grotto or cavern, *see cueva* (1).

**GUACA**, Peru, Costa Rica, Col. (1) ancient Indian grave, often containing gold and pottery, *syn. huaca* ; in Col. there are nine principal kinds, (a) de cajón or cuadrados, (b) de resbalón or con escala, (c) de tambor or redondos, (d) de cancel or con pared de piedra, (e) de triángulo, (f) de media luna, (g) de trastos, (h) osarios, and (i) de pabellón (Angel) ; these are worked by **guaqueros**, a nomad set of Antioquians, *see aposento, barredura* (3), *cacique* (2), *chaguala, cincel* (2), *u. granalla, u. muerto, ta, pared* (4), *pueblo* (3), *regatón* (2), *salón* (4) ; (2) a narrow tunnel or lead in a hill.

**GUACHE**, Ant. Col. (1) alluv. m. a mineral layer between the pay-dirt and the overburden, rather hard and seldom rich (Uribe) ; (2) alluv. m. loose stones from the bed-rock (Muñoz) ; (3) gold-mill. in milling tailings, coarse sand or stones that collect in the boxes without being properly ground up, and which have to be removed from time to time.

**GUAICO**, Ant. Col. (1) hole (*hoyo*) or excavation of indigenous origin (Uribe) ; (2) *see canalón* (5).

**GUAIRA**, Peru, wind-furnace [*horno* (2)] made of clay, used by the Indians for smelting silver ores, *see huayres*.

**GUAIRONA**, Peru, guard-rails at mouth of a shaft (Dwight), *comp. barrera* (5).

**GUÁJARAS**, fastnesses, the roughest part of a *sierra* (1) (Velázquez).

**GUAJE**, Mex. calabash, *syn. calabaza, syn. Cuba, güiro*, Peru, mate (Velázquez), *see huacal, hueja, jícara* (2).

**GUALDA**, Peru, chalcopryite, *see u. bronce* (3) and *pirita*.

**GUALDRA**, Mex. large cross-beam of the *arrastre* (3), etc., this is supported at either end by big vertical posts known as *esteos* ; pump. beam, supported by the *llaves* (4) (*Gamboa*) ; *gualdras*, hoist. largest timbers used for head-frame [*puente* (3)] of a mule-whim [*malacate* (1)] of 40 × 40 cm. section, *comp. gualdrilla*.

**GUALDRILLA**, Mex. timb. bearer of bearing-stemple, may be 30 × 30 cm. section, *see tirante* (4), *traviesa* (4), *comp. gualdra, viga, vigueta, tirante* (5).

**GUAÑÍN**, adj. oro g., gold under legal standard ; metal of which Columbus found some fragments in Española, composed of eighteen

parts of gold, six of silver, and eight of copper (Guim); "el valor del oro guanin (*sic*) ó muy bajo" (Historia General de Real Hacienda, 1845-1853).

**GUANTE** (glove), Sierra Almagrera, Sp. a strong board placed at an angle of 60° over the winch, and used as a pent-house (*resguardo*).

**GUAPIARAS**, *see* *gupiaras*.

**GUAQUERO**, Col. one who searches for treasures in Indian graves or *guacas* (1).

**GUARACHE**, Peru, work in over-time, generally at night (Dwight).

**GUARACÚ**, Ant. Col. basalt, diorite, or greenstone, *comp.* *sabanera*.

**GUARDA**, (1) a rib formed on the side [*hastial* (1)] of a vein, and separating it from the "country": "se ven las guardas marcando la línea de separación entre el cuerpo de la veta y la roca en que arme, fuertemente impregnado de mineral" (Ramirez)—it appears to be analogous to the capels or "backs" of Cornwall; *g. de arcilla*, *salband*, *fluean* or *selvage*, *syn.* *orilla* (2) *de barra* or *de arcilla*, *Guan. Mex.* *cuarache*, *salbanda*, Ant. Col. *urgue* (2), equiv. Fr. *salbande*, Ger. *Besteg*, *see u. jagua* (1), *lama* (1), *comp.* *carrancho* (1), *cascajo* (3); (2) Ant. Col. in native mills, timber frame in front of the battery and above the screens, which keeps the latter from being taken out; *guardas*, blocks of timber just above the *cepo* (3) inferior, acting as guides to the stampers, *see u. guiaderas*; (3) *Pachuca*, Mex. timb. lagging, *see* *guarnición*, *revestimiento* (1); (4) mine guard, *see* *guardaminas*.

**GUARDAAGUJAS**, transp. pointsman, switchman, *see* *agujas* (5).

**GUARDAALMACEN**, storekeeper, *see* *almacenista*.

**GUARDABARRERA**, rail. custodian of a level-crossing (*paso á nivel*).

**GUARDAFIERROS**, Mex. toolman (Dwight).

**GUARDAFRENOS**, transp. brakesman, *see* *frenero*.

**GUARDAMATERIALES**, official who purchases materials for a mint.

**GUARDAMINAS**, (1) mine guards, *see* *quitapepena*, *velador*; (2) under the old *Ordenanzas*, intelligent and practical miners or experts (*peritos*).

**GUARDAPIÉ**, Zac. Mex. timb. sole-piece, *see* *solera* (3).

**GUARDAPOLVO**, transp. dust-guard of a wagon, etc.

**GUARDARAYA** (*guardarraya*), Mex. (1) landmark or boundary made of stone and lime, or stone and mud, *see* *mojón* (1); (2) the end- and side-line of a mining claim (Dwight); (3) surv. mark used underground for measuring work, *syn.* *marca* (2), *see* *blanco* (1), *comp.* *machote*.

**GUARDATINA**, Mex. the man who superintends the working of amalgamation in vats or *tinajas* (G. F. Lyon).

**GUARDATIRO**, Mex. the man who keeps an account of the stuff brought up the shaft (G. F. Lyon).

**GUARDAVÍA**, rail. signalman.

**GUARDAZAPA**, Ant. Col. a working complementary to that of the *zapa* (3).

**GUARNICIÓN**, (1) Mex. timb. lagging, *see* *revestimiento* (1); if on the sides of a gallery = *encostillados*, if on the roof = *camas* (7) or *enca-*

mados, if on the floor = **pisos** (7) ; in shafts, with open crib timbering = **estacadas** (2) ; in running ground = **estacadas** (3) **cortadoras** (spilling laths) ; in soft rocks and drifts, without filling, use **vigas** for the frames [**marcos** (2)] and **viguetas** for the lagging ; in those which need filling, frames of **viga doble** or **tirante** (5), and lagging of **viga** and **vigueta** alternately ; in shafts and winzes, in moderately loose ground, use **vigas** for the **cinchos** (4) and **viguetas** for the **estacadas** (2), in less consistent "country" put continuous **anillos** (2) of **viga**, and, in very broken ground, **vigas dobles** or **tirantes** (5) (Louis Carrión) ; (2) st. eng. packing (Ponce de León), *see* **empaquetadura** (1) ; (3) **guarniciones**, harness, *see* **arnés** (1).

**GUARNIEL** (or **garniel**), *see* **carriel**.

**GUASCA**, Col. (1) plant from the rind of which is made very strong girdles—in roofing houses it is used for tying the small polings [**cintas** (4)] to the **encañados** ; (2) measuring-tape, *see* **cinta** (1).

**GUATACA**, Cuba, spade, *see* **azada** (1).

**GUAYACÁN**, **GUAYACO**, *lignum-vitæ* tree (*Guaiacum officinale*), *syn.* **lodoñera** ; **g. coco** and **g. polvillo** occur in Antioquia, Col., **g. baho** and **g. tonié** in Tolima, Col. and **g. contaro** and **g. negro** in Panamá, *see* **canahuate**, *comp. vera*.

**GUAYRAS**, *see* **huayres**.

**GUBIA**, gouge, *syn.* **escoplo de media caña**, *see* **cincel** (1), **trincha** (1).

**GÜEDALES**, Inguaran, Mich. Mex. irregular contact-veins of copper ores occurring in a porphyritic conglomerate and in a felspathic porphyry (J. C. Haro) ; cupriferous masses occurring in a belt of microgranulite, some 2250 and 2550 feet wide, and 5 or 6 miles long, which intervenes between the andesite and granite from base to summit of the mountain Inguaran. They are brecciated masses of altered microgranulite wherein the chalcopyrite forms the cementing material (E. Cumenge), *see* **masa** (3).

**GÜEJO**, *see* **fiador** (3).

**GÜEMBE**, manila-hemp, *see* **abacá** (2).

**GUÍA**, (1) a piece of wood attached to the highest part of the beam of a **noria** (1) ; the horse or mule, which drives the latter, is attached to this by a rope ; (2) soil or mark indicating the proximity of any vein, and the greater or less abundance of the latter ; the mark directing to the richest part of a vein, *see* **indicaciones** ; (3) blast. a short drill used in commencing the borehole, and before the **medias** and **apuradoras** (1), *see* **barrena** (2) ; (4) **guías**, mech. guides in machinery, as guide-rods of steam-engines ; bor. guides for rods, equiv. Fr. **guides**, Ger. **Bohrlehren** ; hoist. cage-guides, *see* **guiaderas** ; pump, guides of spear-rods, *see* **cárcel** (3) ; mech. prep. guides for lifters [**mangos** (1)] of stamps, *see u.* **guarda** (2) ; (5) **guías**, Chile, little veins, filled by more or less siliceous iron ore and containing gold (Fuchs and De-launay) ; at Chañarcillo, small lateral veins, which are metalliferous only in the neighbourhood of the large lodes ; Peru, mineralised joints



in the country, and small veins and deposits forming stockworks, *see* **veta** (1); (6) **guías**, horses or mules which go before the wheel-horses or mules, leaders, *see* **contraguía** (2); (7) **guías**, guide-lines for the leader-horses; leather straps for horses and mules, those for horses now termed reins (**riendas**), and for mules **pendón**; (8) **guías**, Mex. in the **patio** process, marks put on the ore-heaps [**montones** (1)] in the **incorporo**, in order to know their condition (Gamboa); (9) Ant. Col. main level, gallery or adit, *see* **galería**, *comp. u.* **cañón** (2), **zapa**; (10) Asturias, Sp. c.m. intermediate level, *see* **zapa**; (11) Ant. Col. preliminary excavation made in planning the direction of a ditch (Uribe); (12) Ant. Col. the first water brought along a ditch, and which serves as an indication to the proper level required; (13) Peru, blast. fuse; **rollo de g.**, coil of fuse, *see* **mecha** (2); (14) **carritos guías**, *see* **carritos**; (15) a permit or docket from the Custom authorities; Braz. a certificate from the authorities (Henwood); (16) carp. centre-bit, *see* **broza** (1); (17) **g. de filón**, leader in a lode, guide, feeder or pay-streak, *see* **cinta** (2); (18) Vizcaya, Sp. piece of timber, 12 to 14 feet long, 7 inches wide and 6 inches deep (Acad.), *see* **viga**.

**GUIADERAS**, hoist. wooden guides of a shaft or pit, *syn.* **guías** (4), *see u.* **via** (4); mech. prep. guides of a stamp-mill, etc., *see* **guarda** (2).

**GUIADO, DA**, adj. guided; **cajas** (7) **guiadas**, cages in guides.

**GUIJA**, (1) pebble, pebble-stone, cobble, coarse gravel (Velázquez), equiv. Port. **brelho**, **calhan**, **calhão**, (*see* **callao**), *see* **guijarro** (1); (2) Mex. quartz, *see* **cuarzo**; Guerr. amorphous quartz, *comp.* **teguilote**; Peras, Oaxaca, pure white greasy or milky or yellowish quartz, in general barren, sometimes contains gold, not exceeding 1 adarme per charge, when it is called **guija**, *comp.* **metal rayado**; **g. de oro**, Guan. gold quartz, or quartz containing somewhat coarse grains of native gold (St. Clair Duport); (3) gangue or matrix (**matriz**), thus in Col. any gangue (**piedra de veta**) that contains gold; (4) Batopilas, Chih. Mex. calcite, *see u.* **espato**.

**GUIJARRAL**, place full of pebbles, gravel, etc.; *syn.* **cascajal**, **gorronal**, **lleira**; a heap of pebbles; *comp.* **pedregal**.

**GUIJARREÑO, ÑA**, adj., pebbly, gravelly.

**GUIJARRO**, (1) pebble or boulder, *syn.* **canto** (3) **rodado**, **morrillo**, *see* **chinarro**, **chinazo**, **chinilla**, **guija** (1), **matatena**, **peladilla**, **rollo** (2), *comp.* **cascajo** (1), **china** (1); (2) any siliceous stone, *e.g.*, **g. ferruginoso**, impure and variously coloured rock-crystal (Bárcena).

**GUIJARROSO, SA**, adj. pebbly.

**GUIJEÑO, ÑA**, adj. full of pebbles or coarse gravel, *see* **guijoso**, **sa**.

**GUIJO**, (1) small pebbles or gravel for roads (Velázquez), *see* **cascajo** (1); (2) iron spindle, shaft or gudgeon, *syn.* **muñon** (2), **turrión** (1), *see* **eje** (2); varieties of gudgeons are **guijos de letra L** or **T**, and **guijos de aleta**; Mex. in the **arrastre** (3), a piece of steel in the form of an inverted cone, which fits into the **tejuela** (3) or **d'e**, the upper part is broadened out into the form of a cross, by which it is applied to the

vertical post [**peón** (3)] (Ramirez), *see flecha* (4) ; (3) Sierra Almagrera, Sp. heavy spar (**baritina**)—silver-bearing galena is associated with this mineral in slates.

**GÜIJOLA**, Tepezalá, Aguascalientes, Mex. double bellows used for supplying blast to small copper-smelting furnaces (Ramirez), *see fuele* (1).

**GÜIJOLE**, Dur. Mex. kidney-shaped pieces of cassiterite found in rhyolite (C. Patoni and W. R. Ingalls), *see estaño* (2).

**GUIJOSO**, SA, adj. gravelly, full of pebbles, *see guijeño*, ña ; Mex. quartzose.

**GUILLAME DE ENSAMBLAR**, carp. dovetail plane, *see cepillo* (1).

**GUILOCOTE**, *see u. chicuite*.

**GUIÑAR** (to wink, naut. to yaw), to change in direction (of a vein, etc.), “en el punto de Alamos la caliza esta cruzada por vetas de **tosca** (1), que cortan á las metálicos y las hacen guñar” (A. del M. de F.), *see also* Duport—the “squinting” of veins by loadstone (Derb. Engl.) is analogous.

**GUÍNGARO**, *see huíngaro*.

**GÜIRO**, *see guaje*.

**GÚMENA**, cable, *see cable* (1).

**GUIPIARAS**, *see grupiaras*.

**GURGUARO**, *see barequero*.

**GURGULHO** (gorgulho), Braz. material of the plateau-deposits ; it occurs usually in horizontal beds, and is built up of coarse blocks of the surrounding rocks, with a more or less red clayey earth ; in this the diamond and associated minerals are imbedded (Bauer) ; according to Fuchs and De Launay, a pudding-stone (**conglomerado**) formed of large gravel and red earth, *see diamante*.

**GURGUSEAR**, *see mazamorrear*.

**GURGUSEO**, *see barequeo*.

**GURGUSERO**, *see mazamorrero*.

**HABA** (bean), piece of ore, more or less rounded, encased in gangue ; sometimes met with in veins (Acad.), *see u. boleó* (1).

**HABER**, property, income, assets ; com. = Cr.

**HABILITACIÓN**, (1) fitting out, equipment ; funds, etc. *see avío* (2) ; una compañía refaccionaria or de **habilitación y avíos**, a company that furnishes funds for mining operations, etc., *see sociedad* ; (2) h. de bombas, pump-gears (Ponce de León), *see u. juego* (1).

**HABILITADOR**, outfitter, *see aviador* (2).

**HABILITAR**, to supply, equip ; to furnish funds for a mine, etc., *see avío* (2).

**HABITACIÓN**, abode, lodging ; underground room for men to rest in, etc.

**HACENDADO**, land-holder, farmer, *syn.* Cuba, **estanciero**, Mex. **ranchero**, Cuba, **sitiero** (cattle-raiser), equiv. Braz. **roçeiro**.

**HACENDERO**, (1) Span. Am. superintendent of the hacienda (3) ;

(2) Almaden, Sp. day-labourer (*jornalero*) on account of the *hacienda* (Acad.).

**HACER**, *h. adelantos*, com. to advance money ; *h. asiento*, mas. to settle ; *h. balance*, com. to balance accounts ; *h. funcionar*, mech. to work an engine, etc., *h. lis*, see *lis* ; *h. mezcla*, *h. mortero*, to temper mortar ; *h. mina*, to make a mine ; *h. muescas*, to mortise ; *h. saltar un barreno*, to blast or shoot, see *tirar* (1) ; *h. tierras*, Mex. alluv. m. the conjunction of operations including *desmontar* (2), *planear* and *cascajear* (1).

**HACHA**, (1) axe or hatchet, *syn. segur*, see *destral* ; *h. de tumbar*, felling-axe ; see Fig. 45 for axe used by timbermen in Almaden, Sp. ; (2) *h. de viento*, *h. encendida*, a torch, see *antorcha*, *cohete* (3).

**HACHAZUELA**, Mex. adze, see *azuela*.

**HACHERO**, woodcutter, etc.

**HACHUELA**, small hatchet or axe.

**HACIENDA**, (1) farm or estate ; landed property, see *estancia* (2), *finca* (1), *rancho* (2) ; (2) *H. Real* or *Real H.*, Exchequer or Public Treasury, now called *H. Nacional* or *Pública* ; *Ministro de H.*, (S. Am. *Secretario de H.*), Chancellor of the Exchequer, Secretary of the Treasury, Minister of Finance ; (3) Span. Am. smelting or reduction works ; *h. de beneficio*, amalgamation works ; *h. de beneficio maquiladora*, amalgamation reduction works ; *h. de fundición*, smelting works, equiv. Braz. *fazenda*, see *u. oficina* (4) ; (4) mill or dressing floors, see *cancha* (4), *lavadero* (1), *lavería*, *molino* (1), *u. oficina* (4), *taller* (3), *comp. cancha* (2) ; *h. de maquila* (1), custom-mill.

**HALLAZGO**, discovery (of a deposit), see *descubrimiento*.

**HAPIRE** (*apire*), (1) trammer, see *carretero* (1) ; (2) Peru, labourer who assists the miner ; *hapires*, Cerro de Pasco, labourers who bring up the ore from the shaft ; each load consists of from 50 to 75 lb. of ore, which is carried in a very irksome and inconvenient manner in an untanned hide called a *capacho* (Tschudi, 1847) ; the Chilian *apire* carries nearly 200 lb. weight of ore in a leathern bag on his shoulders (Henwood), *syn. chaquires*, see *apireo*, *rongueros*, *comp. refaccionero*, *tenatero*.

**HARINA** (flour), (1) *h. fósil* or *h. silicea*, infusorial earth or tripolite (diatomaceous) ; (2) fine powder of metals, etc. ; *harinas del bocarte*, gold-mill. pulp, *syn. Peru, masa* (8), see *u. polvo*.

**HARNEAR**, mech. prep. to screen, see *cribar* (1).

**HARNERERO**, Mex. operator of a hand-jig (Dwight), see *riquitrúm*.

**HARNERO**, Mex. orig. a slope covered with leather perforated with small holes over which the crushed ore slides (G. F. Lyon) ; sieve, screen, see *criba* ; Mex. hand-jig (Dwight), see *riquitrúm*.

**HASTIAL** (*astial*), (1) the surface of either wall or roof or floor of a deposit, but often used synonymously with wall (*respaldo*) ; side of a deposit, *syn. costero* (3), *pared* (3), *comp. guarda* (1), *reliz* (1)



FIG. 45.

Hacha (1) de Almaden (after Ezquerro).

*r*, ranura for taking out nails.



- (2) *hastiales*, sides of a gallery (*costados*), of a shaft (*paredes*), or of any excavation.
- HATERO**, carrier of provisions to mines, quarries, etc. *comp.* *abajador* (1).
- HAYA**, beech-tree, beech.
- HAZ**, (1) fascine ; fagot, a bundle of brushwood or straw, *syn.* *fajina*, *see u.* *salchichón* ; (2) a group of deposits, *see grupo*.
- HEBILLA**, a buckle.
- HEBRA**, (1) a thread or yarn of a hempen or other rope, *syn.* *fibra* ; a number of these grouped together, but not twisted = *filástica* (Molina), *comp.* *corchado* ; several twisted together form the *hilo* (4), *comp.* *cordón* (2) ; (2) a vein of minerals or metals, *see veta* (1) ; (3) layer or stratum, *see estrato*.
- HEBRUDO**, Huitzucó, Guerr. Mex. barcenite, an antimoniate of lime and mercury, *see u.* *mercurio* (2), *comp.* *antimonioso*.
- HECTARA**, hectare (Fr.) or 10,000 square metres.
- HEDIONDO**, DA, adj. *piedra hedionda*, *see u.* *piedra*.
- HEMATITA**, hematite, *syn.* *hierro oligisto*, *hierro rojo*, *hierro rojo fibroso*, *see campanil*, *dionisia* (2), *granzón* (2), *madre* (5) *del oro*, *rubio*, *vena* (2).
- HEMATITES**, *see dionisia* (2)
- HEMBRA**, (1) Pachuca, Hid. Mex. timb. end-piece of a shaft frame, *see crucero* (3) ; (2) timb. post (Dwight), *see columna* (1) ; (3) nut of a screw, *see tuerca*.
- HENDEDURA**, **HENDIDURA**, fissure, crevice, crack or rent, *syn.* *abertura* (1), *agrietadura*, *agujero* (3), *barranco* (1), *fisura*, *raja* (2), *prov.* *rajadura*, *resquebrajadura*, *resquebrajo*, *equiv.* *Port.* *aberta*, *fenda*, *greta*, *racha*, *Fr.* *fissure*, *Ger.* *Spalt*, *Kluft* (of a vein), *comp.* *abra* (3), *grieta*, *quebrada* (3), *quiebra* (2), *ventanilla* (3).
- HENDER**, to split.
- HENDIBLE**, fissile.
- HENDIDURA**, *see hendedura*.
- HENEQUÉN**, (1) the American aloe, *see agave* ; (2) fibre of (1), *syn.* *jeniquén*, *see cabulla* (2) ; fibre of *Agave rigida*.
- HERRADA**, wooden pail, *see balde*.
- HERRADO**, DA, adj. *agua herrada*, water in which red-hot iron has been cooled.
- HERRADURA**, horse-shoe, shoe for mules, etc., *see herraje* (2).
- HERRAJE**, (1) shoeing ; (2) shoes (*herraduras*), and nails for shoeing ; (3) mech. ironwork, *syn.* *obs.* *herramienta* (4).
- HERRAMIENTA**, (1) tools, mining tools, *syn.* *Col.* *útiles*, *see amaños*, *hierro* (2), *instrumento* (1) ; (2) blast. a borer or hammerman, *see barretero* ; (3) *una herramienta*, *Guan. Mex.* a pare, *see parada* (3) ; (4) *obs.* *iron-work*, *see herraje* (3).
- HERRAR**, (1) to shoe horses ; (2) to brand cattle, *see hierro* (3) ; (3) mech. to bind, strengthen or adorn with iron.
- HERRERÍA**, (1) smith's work or office ; (2) ironworks ; (3) forge, *see forja* (1).
- HERRERO**, smith, blacksmith.

**HERRUMBRE**, rust of iron, *see* **orín**.

**HERVEZÓN**, Ant. Col. (1) alluvium confusedly intermingled with poor sands (*arenas frías*) or superficial earth ; (2) hole made in the lower part of dams (*tupias*) in rivers or *quebradas* (Uribe).

**HERVIDERO**, (1) boiling spring (*manantial*), making a characteristic noise ; (2) Cent. Am. mud-volcano, *syn.* Mex. *hornito* (3).

**HERVIDO**, DA, adj. *mina hervida*, Ant. Col. alluv. m. pay-dirt [*cinta* (3)] deposited by a whirlpool (Uribe), *comp. u.* *soplado*, da ; *peña hervida*, *see u.* *peña* (4).

**HEZ**, (pl. *heces*), dross of metals, *see* *escoria* (2).

**HICHU**, *see* *ichu*.

**HIDRÁULICO**, CA, adj. hydraulic.

**HIDRÓGENO**, hydrogen ; h. *protocarbonado*, marsh-gas or light carburetted hydrogen [ $\text{CH}_4$ ], *syn.* *formeno*, gas de pantanos, metano, equiv. Fr. *gaz de marais*, Ger. *leichte Kohlenwasserstoffgas*, Grubengas, Sumpfgas, Methylwasserstoffgas ; a mixture of this with air in explosive proportion = fire-damp, *see* *grisú*.

**HIDROLANZA**, *see* *gigante*.

**HIERBA**, *see* *yerba*.

**HIERRO**, (1) iron ; h. *afinado*, puddle-iron, refined iron ; h. *cabilla*, *see* *cabilla* (2) ; h. *carretil*, bar-iron, 1 cm. wide by 2 cm. thick, *syn.* h. *de llantas* ; h. *cellar*, bar-iron 5 cm. wide by 1 cm. thick, *syn.* h. *arquero*, h. *planchuela* ; h. *cöchino*, pig-iron ; h. *colado*, h. *de fundición*, h. *fundido*, bronze (2), cast-iron ; h. *cuadradillo*, h. *cuadrado*, iron 2 cm. square ; h. *de canal*, channel-iron ; h. *de doble T*, double T-iron ; h. *dulce*, soft iron ; weld iron ; h. *en ángulo*, angle-iron, *see* *codo* (3) ; h. *en flejes*, hoop-iron ; h. *forjado*, forged iron ; h. *labrado*, h. *de fragua*, wrought-iron ; h. *laminado*, h. *en planchas*, sheet-iron ; h. *palanquilla*, iron 4 cm. square ; h. *platina*, flat iron ; h. *tocho*, iron 7 cm. square ; h. *tochuelo*, iron 5-6 cm. square, *syn.* h. *medio tocho* ; h. *varilla*, round bar of small diameter. (NOTE. —Formerly spelt *fierro*.) (2) An iron tool, *see* *herramienta* (1) ; (3) iron for branding, *see* *herrar* (2) ; (4) iron ore ; h. *acicular*, *göthite* ; h. *arcilloso*, clay ironstone, *see u.* *siderosa* ; h. *arsenical*, h. *blanco* (or *ferro blanco*), *arsenopyrite* ; h. *brillante*, h. *especular*, h. *espejado*, specular iron ore ; h. *cromado*, chrome iron ore ; h. *espático*, *spathic iron*, *see* *siderosa* ; h. *limoso*, *de praderas*, *de pantanos*, or *de los estanques*, bog-iron ore ; h. *magnético*, magnetite ; h. *parda*, brown iron ore ; h. *rojo*, hematite, *see* *hematita* ; h. *viejo*, Peru, silver ores consisting mainly of iron oxide (Dwight) ; *hierros secos*, Cartagena, Sp. ores carrying 50 per cent. of metallic iron (R. Oriol) (*hierros manganetíferos* = those carrying up to 28 per cent. of manganese), *see* *arenilla* (3) and (4), *u.* *bronce* (3), *miñón* (2), *moco* (2), *oligisto* ; (5) *hierros (fierros)*, Mex. *stein*, iron matte or regulus, *syn.* *hierros de planchera*, *espumas* (9), *mata* (1) ; (6) *hierros del vaso*, “*Abzug*” and “*Abstrich*” from refining lead ; (7) *hierros (fierros)*, Mex. low-grade silver ores (from 20 to 35

ounces per ton); (8) steel, *see* **acero**; (9) **h. especular**, spiegeleisen; (10) **madera de h.**, ironwood.

**HIERROSO, SA** (fierroso, sa), adj. metal hierroso, (a) Peras, Oaxaca, Mex. masses of iron ore, generally in cubical fragments, *comp.* **tepostel** (1); (b) *see* **riolita** (2).

**HÍGADO** (liver), (1) Peru, Dep. Amazonas, an oxide of iron, sometimes found with **nusco** and **panal de rosa** in small isolated masses—the gold is scarcely ever visible as it is disseminated through the whole in imperceptible dust (Sir C. Mansfield), *see* **oro**; (2) lenticular deposit of gold, *see* **manto** (3), **oro**.

**HIJUELA**, (1) small thread of ore or mineral, *see* **u. hilo** (2); (2) **hijuelas**, Mex. in the **patio process**, a small sized **torta** made up as a sort of assay on a large scale, with from 1 to 5 kg. of argentiferous mud (Chism), *see* **tentadura** (1).

**HIJUELOS**, Ant. Col. alluv. m. lateral drainage from the **principal** (1).

**HILADA**, row, line or course of bricks or stone in a building; line of masonry in a shaft, etc., *see* **camada** (2).

**HILERA**, (1) mas. bed, course; **h. de cantos**, course of stones (Ponce de León), *see* **camada** (2); (2) timb. a board or pole forming the joint between two inclined props, *syn.* **carrera** (8), *see* Fig. 50, **u. jabalcón** (2); (3) b. constr. ridge-pole, tie-beam, *syn.* **cumbrera** (1), **gallo** (6); (4) **h. costeable**, pay-streak (Lucas), *see* **cinta** (2); (5) wire-plate, *see* **hilo** (5).

**HILO** (thread), (1) **h. de la veta** or **h. del criadero**, direction of the vein or deposit, *see* **rumbo** (1); **á. h. de veta**, along the vein (**de cabecera** = across); (2) small vein or thread of ore in a lode, *e.g.*, **hilos altos**, threads falling into or proceeding from the hanging wall, **hilos bajos**, threads proceeding from or falling into the footwall; **hilos del desposorio**, Santa Cruz mine, Villalpando (Guerrero), Mex. small veins of clay crossing the Veta Madre, and containing much gold in impalpable powder (Humboldt); (3) Ant. Col. a vein or lode, a thin vein, branch or thread being known as **aguja** (6); in the Cauca, the name is applied to small veins of gold-bearing quartz; **h. de cajón**, vertical vein; (4) *see* **u. hebra** (1); **h. bramante**, pack-thread, *syn.* **bramante**; (5) wire or metal drawn through a wire-plate [**hilera** (5)]; (6) **h. de agua**, small jet of water; streamlet, *see* **arroyuelo**.

**HINCHARSE**, to swell (of certain clays or argillaceous schists); to rise (of rivers, etc.).

**HINCHAZÓN**, increase in volume of a rock broken off in underground workings (Molina), *syn.* **aumento**, equiv. Fr. **erfoisonnement**.

**HIPOTECA**, mortgage.

**HISCAL**, an **esparto** rope of three strands [**ramales** (1)].

**HITA**, small headless nail; stub-nail, *see* **clavo** (1).

**HITO**, landmark; **h. de esquina**, corner stake, *see* **u. jalón**, **mojón** (1).

**HITÓN**, large square nail without a head (Acad.), *see* **clavo** (1).

**HOCINO**, (1) bill for cutting firewood (**leña**); (2) narrowness (**angostura**) of rivers between mountains (Acad.), *see* **hoz**.



**HOGAR**, (1) hearth, fireplace, *syn.* Mex. *brasero* (2), *chimenea* (2), *fogón* (1), *fuego* (4), Mex. *mesa* (6), *see enrejado, fogaña, sabalera*; (2) fire-box of a locomotive, *syn.* Mex. *buitrón* (2), *caja* (22), *fogón* (2); (3) vent. furnace.

**HOJA**, (1) *h. de pizarra*, slab of slate; *h. de libro*, Guan. Mex. a schistose rock of a black colour, and of a slatey texture (Ramirez) = *ampelite*, *see esquisto*; *h. de papel*, finely laminated clay, slate or talc; (2) *h. de lata*, tin-plate, tinned sheet-iron, *syn. hojalata*; *h. de lata negra*, iron plate; *h. de latón*, sheet-brass; (3) carp. thin board sawn from mahogany (*caoba*) or other wood; (4) thin scale which separates from a metal plate when heated and struck with a hammer, *see escoria* (2); (5) *de dos hojas, de tres hojas*, two-ply, three-ply (of belting); (6) *batir h.*, to reduce gold, silver and other metals to thin plates.

**HOJALATA**, tin-plate, *see u. hoja* (2).

**HOLGAR**, to strike work, *see huelga*.

**HOMBRO** (shoulder), *transporte á h.*, *see paseo de tierras*, and *u. transporte*.

**HONDA** (sling—naut. parbuckle), Mex. rope-chair for descending shaft (Dwight), *see u. bajada* (1).

**HONDO**, prov. bottom, *see fondo* (3).

**HONDONADA**, (1) any deep ground, prov. ravine, *see barranca* (2); (2) geol. trough, *comp. silla* (4).

**HONDURA**, (1) depth, profundity, *see profundidad* (1); (2) Ant. Col. alluv. m. a sudden and extraordinary depression in the surface of the bed-rock, which may make the working of the claim very difficult for want of drainage facilities (*tonga*), or on account of the quantity of stuff to be extracted (Uribe).

**HONORARIOS**, fees.

**HONTANAR**, place in which springs (*manantiales*), rivers, etc., have their source.

**HORA**, hour; *horas de pueble*, *see u. tequio* (2).

**HORCA**, (1) c.m. hoist. gallows-frame, pit-head, pulley-frame or head-gear, m.m. poppet-heads, *syn. apeo* (2), *armadura* (1), *armazón* (1), *castillete*, Mex. *castillo* (2), *cuerpo* (9) *de polea*, equiv. Fr. *chevalet des molettes*, *charpente de molettes*, *chevalement de puits*, *belle fleur*, Ger. *Fördergerüst*, *Seilscheibengerüst*, *see barra* (9), *tornapunta* (3) and (4); (2) *see horcón, horqueta*.

**HORMA**, dry wall, *syn. pared h.*, *see u. muro* (1).

**HORMIGÓN**, concrete, *syn. calcina, concreto, mazacote* (2); *h. hidráulico*, cement concrete (as used in tubbing, etc.).

**HORMIGUILLAR**, Peru, in the *patio* process, the second *repaso*, *see hormiguillo* (2).

**HORMIGUILLO**, (1) line of people who pass materials, etc., from hand to hand, *comp. trecheo*; (2) Peru, in the *patio* process, the second treading or *repaso*, for working in the *magistral*, before mercury is added (*incorporo*).

**HORNACERO**, person who assists with, or is in charge of, the **hornaza**.

**HORNACHO**, (1) shaft of a mine, *see* **pozo** (2); (2) digging for ochre, sand, etc., or excavation made in the sides of hills in looking for ores, etc., *see* **zanja** (1).

**HORNADA** (batch of bread), met. one complete smelting operation in any one furnace.

**HORNAGUEAR**, to dig for pit-coal.

**HORNAGUERA**, pit-coal, hard coal; **terreno de h.**, coal measures; **h. apizarrada**, slate-coal, *see* **hulla** (2).

**HORNAGUERO, RA**, adj. applied to formation containing pit-coal.

**HORNAZA**, small furnace [**horno** (2)] for melting and casting.

**HORNERO**, furnace-man; practical smelter.

**HORNIJA**, small fire-wood (**leña**) for lighting purposes (Acad.).

**HORNILLO, HORNITO**, (1) stove, small oven or small furnace [**horno** (2)]; assay. portable furnace; Mex. furnace of the **vaso** type, *see* **vaso** (2 a); (2) blast. chamber used in large blasts (**voladuras**); (3) Mex. a mud-volcano (Velázquez), *see* **hervidero** (2).

**HORNO**, (1) a kiln; **h. de cal**, lime-kiln, *see* **calera** (2); **h. de ladrillo**, brick-kiln, *see* **ladrillera** (1); (2) a furnace; **alto h.** or **h. alto**, blast-furnace (Fr. **haut fourneau**); **h. acoplado**, double hearth-furnace; **h. castellano**, low shaft-furnace, *see* **castellano** (3); **h. cubierto**, jacket-furnace; **h. de afinación**, **h. de refinar**, finery or refinery furnace; **h. de calcinación**, calcining furnace; **h. de copela** or **de copelar**, assay. muffle-furnace; met. cupelling-furnace, *see* **cópola** (1); **h. de cuba**, shaft-furnace, generally a blast-furnace; **h. de cubilote**, shaft-furnace; **h. de fundición**, smelting furnace; **h. de gran tiro**, high shaft-furnace (draught-furnace); **h. de magistral**, Mex. furnace for roasting copper pyrites (Lyon); **h. de manga**, blast-furnace (generally low); **h. de pava**, *see* **pava**; **h. de reverbero**, or **de tostadillo**, reverberatory furnace; **h. de soplete** (2), tuyere (twyer) furnace or blast-furnace; **h. de tiro de aire caliente ó frío**, hot or cold blast-furnace; **h. de tostar**, roasting furnace, *syn.* Mex. **calcín**; **h. en actividad**, furnace in blast, *see* **u. calentar**; **h. parado**, furnace out of blast; **h. soplante**, blast-furnace; **h. subterráneo**, c.m. vent. furnace; **hornos**, Mex. adobe furnaces; for varieties *see* **aglomerador**, **u. aludel**, **barquina**, **bocahorno**, **boliche** (5), **braguetilla**, **buitrón**, **caperuza** (3), **castellano** (3), **chacuaco**, **chimbo**, **comalillo** (1), **comillo**, **cópola** (1), **galemador** (1) and (2), **galeme** (1), (2) and (3), **guaira**, **hornaza**, **u. hornillo** (1), **huayres**, **muffa** (2), **oficina** (3), **pachamanca**, **quemadero** (1), **semi-altos**, **tocochimbo**, **vaso** (2); for parts of furnaces, *see* **adobío**, **u. asiento** (8), **atizadero**, **bigote** (1), **u. boca** (7), **bocaza**, **botador** (3), **camisa** (2), **capitel** (2), **chacuaco**, **comalillo** (2), **copa** (2), **copela** (2), **crisol** (2), **cruz** (9), **cuba** (4), **cubierta** (2), **dama**, **delantero**, **escoriadero**, **gancho** (4), **güijola**, **hogar** (1), **labio** (1), **ojo** (14), **pecho** (1), **pileta** (2), **piquera**, **pívote** (1), **planchera**, **planta** (5), **rejilla** (3), **reposadero** (1), (2) and (3), **sifón** (2), **tabla** (2), **timpa**, **tobera**, **tragante** (4) and (5), **vaso** (2), **vientre**; for furnace

operations, etc., *see* **apagar**, **bigote** (2) and (3), **calentadura** (1) and (2) **cola** (9), **descarga** (4), **dragonera**, **embanques**, **entromparse**, **espodio**, **fuslor**, **lampazo**, **lecho** (3) and (4), **morro** (3), **picador** (2), **picar** (2).

**HORQUETA**, **HORQUILLA** (dim. of **horca**), (1) mech. fork ; h. de cabeza, st. eng. fork-head ; *see u.* **trépano** ; fork of a horse-whim [**malacate** (1)] to which the horses are attached, *comp.* **bolea** ; u. haul. fork attached to wagon, and used in endless-chain system—it is sometimes like a row-lock (**postiza**), *see* Fig. 46, after Molina, *comp.* **tenaza** (2) ; pump. forked end of a spear or main-rod, *syn.* **bastidor** (4) ; (2) Mex. coke-fork (Dwight),

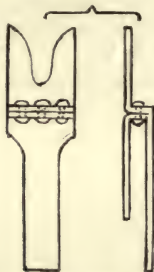


FIG. 46.

Horqueta (after Molina).

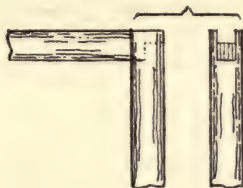


FIG. 47.

Horquilla (3) (after Luis Carrión).

*see* **trinchá** (3) ; (3) Zac. Mex. timb. a method of joining vertical and horizontal props, *see* Fig. 47 ; **horquillado** = conjunction of several of these, *see* **ajuste** (3) ; (4) Ant. Col. sawn timber united at an angle.

**HORQUILLADO**, *see u.* **horquilla** (3).

**HORRURA**, scoria, dross, *see* **escoria** (2).

**HOYA**, (1) hollow or excavation, more or less deep, made in the earth, *comp.* **hoyo** (1), **socabón** (4) ; (2) geol. basin, *e.g.*, h. de carbón, coal-basin, *see* **cuenca** (3) ; (3) Peru, bed of a river, *see* **álveo** (1) ; (4) depression in the centre of a whirlpool [**remolino** (1)] or eddy ; (5) top. extensive plain (**llano**) surrounded by mountains (Acad.).

**HOYADA**, (1) depression, basin, *see* **cuenca** (3) ; (2) **veta de h.**, *see u.* **trabajo** (2).

**HOYO**, (1) cave or hollow in the earth, either natural or artificial ; pit, *syn.* prov. **chorca**, **foso**, *see* **guaico**, **zanja** (2), *comp.* **cueva** (2), **hoya** (1) ; (2) Ant. Col. deposit exploited with a few peons in **aventaderos** (1) and **minas de tonga** (Uribe) ; (3) Ant. Col. alluv. m. excavation made with many peons at once in **minas de saca** (5) (Uribe), *see* **abrevadero**, **asentar** (2), **jamuración**.

**HOZ**, narrowness (**angostura**) of a deep valley, or of a river running between two mountains (Acad.), *see* **hocino** (2).

**HUACA**, Peru, burial-place, ruins, etc., of the ancient Indians, *see* **guaca**.

**HUACAL**, Mex. bowl ; drinking-dipper made of the gourd (Dwight), *see* **guaje**.



**HUACHACAS**, Cerro de Pasco, Peru, portions of ore which are distributed among the Indians at the time of the *boyas* (*bonanzas*), instead of their wages being paid in money (*Tschudi*) ; portions of ore paid to tributors, *see u. partido* (3).

**HUAILLARIPA**, Peru, thief of gold-ore (*Dwight*), *see ladrón* (2).

**HUAILLARIPPEAR**, Peru, (1) to steal gold ore ; (2) to extract gold from tailings by means of a sheepskin in a gentle current of water (*Dwight*).

**HUAIRA**, Peru, (1) vent. brattice, generally of wood, *syn. huairacañon*, *see tabique* (3) ; (2) vent. air-box, *see caja* (20). (NOTE.—From Quechua word meaning wind. *See huayres*.)

**HUAIRUNA**, Peru, small earthen retort (*retorta*), used for retorting amalgam, extracting from 5 lb. to 15 lb. silver (*Dwight*).

**HUAQUERO**, Peru, a pitcher of fine earthenware found in the *huacas*.

**HUAYCO**, *see llapana*.

**HUAYRES**, Bol. clay furnaces formerly used by the Indians of Potosí, *syn. guayras*, *see guaira, horno* (2), *huaira*.

**HUECO**, (1) mech. notch or nick of a wheel into which the leaves of a pinion or the teeth of a wheel hitch, or set it in motion (*Velázquez*) ; (2) a vug, *see drusa* ; (3) *see demasia* ; (4) a mortise, *see muesca* (1) ; (5) *huecos y pilares*, ordinary pillar and stall (*Scotch*, stoop and room), equiv. Fr. *piliers tournés*.

**HUEJA**, Mex. bowl made from a gourd (*Dwight*), *see guaje*.

**HUEJO**, *see fiador* (3).

**HUELGA**, a strike of workmen, *see holgar*.

**HUELLA**, (1) Mex. a trace of gold or silver in assaying (*Dwight*), *see vestigio* ; (2) flat portion of the steps of a staircase (*Acad.*), *see escalera* (1).

**HUESO** (bone), (1) part of limestone remaining unburnt in the kiln ; (2) *Sain Alto*, Zac. Mex. wood-tin, *see estaño* (2).

**HUESUDO**, *see u. caliche* (1).

**HUEVO** (egg), Ant. Col. (1) *huevos*, in a beaded vein, the name given to the bellies or swollen portions of ore, *see u. tope* (6) ; (2) large boulder of granite or other hard rock in soft country ; (3) *h. de pajarito*, *see u. mulata*.

**HUIDA**, (1) timb. stemple-notch, egg-hole, hitch or step, *syn. agujero* (2), *arpeo, asiento* (13), Zac. Mex. *cárcel* (2), Mex. *cazadera, cepo* (2), *chocolón* (2) or *cholcón*, Pachuca, Mex. *coz* (1), Peru, *muesca* (2), Guan. Mex. *solera* (4), equiv. Fr. *nass*, *potet*, Ger. *Bühnloch*, *comp. canizo, mechinales* (2) ; (2) timb. hitch made for the foot [*culata* (3)] of a stemple, *comp. cabeceadero* (1).

**HUIDERO**, Almaden, Sp. workman who makes the hitches, *see huida* (1).

**HUÍNGARO** (or *guíngaro*), Mex. pick, pick-axe, *see pico* (1).

**HULE**, (1) oil-cloth, oil-skin, *syn. encerado* (1) ; (2) *caoutchouc*, *see caucho*. NOTE.—The rubber-tree = *ule*.

**HULLA** (or *ulla*), (1) pit-coal, black bituminous coal ; (2) generic name for all fossil coals ; *h. apizarrada*, slate-coal ; *h. brillante* (Fr. *houille éclatante*), anthracite ; *h. de llama* (Fr. *houille flambante*), bituminous coal ; *h. grasa* (Fr. *houille grasse*), fat coal, bituminous coal, caking

- coal ; **h. magra** (Fr. *houille maigre*), lean coal, non-caking anthracitic coal ; **h. para gas**, gas-coal ; **h. piciforme**, jet (*see* **azabache**) ; **h. seca** (Fr. *houille seche*), dry coal, coal little bituminous or non-bituminous, yielding metallurgical coke ; *see* **ampelita** (1), **antracita**, **carbón** (2), **hornaguera** ; (3) **h. carbonizada** or **destilada**, coke (**cok**).
- HULLERA** (or **ullera**), (1) coal-mine, colliery, *syn.* **carbonera** (3), **carbonería** (3), **carbonero** (6), **mina de carbón** (2), **mina de hulla** (2) ; (2) *geol.* coal formation.
- HULLERO** (or **ullero**), coal-miner or collier, *see* **carbonero** (2).
- HULLITA** (or **ullita**), *see* **antracita**.
- HUMEDAD**, moisture.
- HUMEDAL**, humid soil, a marsh, *see* **pantano** (1).
- HUMERO**, flue, funnel or shaft of a chimney, generally vertical ; chimney-flue, *syn.* **Murc. Sp. alcabor**, **Mex. canal** (8) **de humo**, **cañon** (3) **de chimenea**, *comp.* **tragante** (5).
- HUMIENTO**, metal h., Guadalcázar, S. L. Potosí, Mex. complex silver ores, as **plata agria**, **gris** and **antimonial** (S. Ramirez).
- HUMILDES METALES**, Peru, silver ores which amalgamate readily without sickening or flouring the mercury (Dwight).
- HUMO** (fume or smoke), damp or damps in a mine (Fr. *fumée*), *see* **bochorno**, **gas de pantanos**.
- HUMORES**, L. Cal. Mex. traces (Lucas), *see* **vestigio**.
- HUMPE** (or **umpe**), Peru, carbonic acid gas in mines, choke-damp, *see u.* **ácido** (1). NOTE.—Spelt also **jumpe**.
- HUNDIDO**, **DA**, pp. of **hundir**, caved in ; in Spain a mine which is caved in (**hundido**) is said to be **cegado** (blind).
- HUNDIDO**, cave or run, *see* **derrumbe** (1).
- HUNDIMIENTO**, (1) cave or run of ground, *see* **derrumbe** (1) ; falls of roof, etc. ; (2) letting down the roof (*e.g.*, in longwall working), *syn.* **sistema por h.**, equiv. Fr. *éboulement*, *écrasée*, *effondrement*, *foudroyage*, *tombée* ; (3) *geol.* subsidence, *see* **subsistencia**, *comp.* **revenimiento** ; (4) labor por h., c.m. longwall, *see u.* **labor** (3) ; (5) **mampostería por h.**, *see u.* **mampostería** (2) ; (6) *geol. dip*, *see* **echado**.
- HUNDIRSE**, (1) to cave in or run ; (2) *geol.* to subside ; (3) *geol.* to dip, *see* **buzar**.
- HÚNGARA** (Hungarian), **ajuste á la h.**, *timb.* *see* Fig. 48, and **patillo**.
- HURGA**, transp. a long pole or rod [**vara** (1)] used for loosening obstructions in shoots (chutes), winzes, etc. (Molina), *comp.* **garlancha** (*u.* **garlancheros**).
- HURGÓN**, poker, *syn.* **atizador** (1) ; **h. de punta curva**, met. **rabble** (Ponce de León).
- HURTO**, Almaden, Sp. a gallery (**galería**), driven on one side of the main road in order to facilitate the extraction of ore, and for ventilating purposes, etc. (Acad.).
- HUSO**, barrel of a windlass, *see* **árbol** (2).



FIG. 48.  
Ajuste (3) á la  
húngara  
(after Ezquerra).

**IBIRIPITANGA**, Braz. Brazil-wood, *see u. pao*.

**ICHO, ICHU** (or hichu), Peru, the grass which grows spontaneously on the heaths of the Andes (Velázquez); at Apurimac, the roots of ichu are placed on hurdles in inclined channels in order to catch the flakes of gold; at Huancavelica, *paja* or *ichu* and guano form the fuel (combustible) used in the Barba furnace (Umlauff), *see u. aludel*.

**IGUALA**, (1) agreement, contract, *see contrato* (1); (2) commutation of taxes; (3) level used by masons, *see u. nivel* (1).

**IGUALAR**, *see recortar*.

**IJADA** (flank), (1) *ijadas*, Mex. assays of from 2 to 5 lb., *see ensaye* (1); (2) *piedra de (h)ijada*, jade (Kunz). NOTE.—Used in 1565, *see jade*.

**ILUMINAR**, *i. aguas* or *alumbrar aguas*, to search for and discover subterranean waters, and to bring them to the surface by artificial means (Acad.).

**IMÁN**, (1) loadstone, *syn. obs. calamita* (1), *piedra i.*; (2) magnet, *syn. i. artificial*; (3) electro-magnet; (4) mariner's compass.

**IMANAR, IMANTAR**, to magnetise.

**IMANTACIÓN**, magnetisation.

**IMANTAR**, *see imanar*.

**IMBIBICIÓN**, desilverising rich ores, lead matte, etc., in a bath of metallic lead.

**IMPEDIMENTOS**, leg. disqualifications.

**IMPELENTE**, *see u. bomba* (1).

**IMPORTACIÓN**, importation; *derechos de i.*, or *de internación*, import dues; *see u. derecho*.

**IMPORTE**, amount, value; *i. del flete*, cost of freight.

**IMPOSICIÓN**, tax or duty, *see impuesto*.

**IMPUESTO**, tax, impost, duty; *i. minero*, mine tax, mining tax; in Mexico, concession mines, other than those of silver, gold and platinum, pay \$2.50 in stamps for title-deed, and \$2.50 per annum in taxes for each claim; gold, silver and platinum mines pay \$10 in stamps for title-deed, and \$10 per annum in taxes for each claim or *perpetencia*; in Col. \$5 must be paid for each alluvial claim, and \$2 for each vein claim; for Spain, *see canón* (suppl.), for Chile, *see patente*; *i. de minas*, royalty; *i. sobre la renta*, income tax, *see contribución, derecho, imposición*.

**IMPULSIÓN**, *columna de i.*, pump. delivery or discharge column as distinguished from suction column (*columna de aspiración*), *see u. válvula*.

**INAGOTABLE**, adj. inexhaustible (of a mine or mineral deposit).

**INCENDIO**, fire.

**INCLINACIÓN**, (1) dip, *see echado*; *i. magnética*, the angle of magnetic dip; (2) top. declivity, *see pendiente* (1); (3) rail. gradient, *see pendiente* (2); (4) mech. bending, flexion; (5) *i. de un techo*, pitch of a roof.

**INCLINARSE**, to dip, *syn. pisar* (1), *recostar*.



**INCORPORADERO**, Mex. place, yard or large shed [*galera* (1)] where the mercury is incorporated in the ore-piles [*montones* (1)] with the other ingredients of the *beneficio de azogue* (Gamboa), *see* *patio* (1).

**INCORPORAR**, Mex. to mix magistral and mercury in the *lamero* (2), *comp.* *cebar*.

**INCORPORO**, Mex. in the *patio* process, the mixing of the magistral and mercury with the salted ore in the *lamero* (2) (afterwards known as *torta*) ; chamois leather (*gamuza*) is used in order that the quicksilver may fall in the form of rain over the whole of the *torta*. The quantity of mercury used is six times the weight of silver in the latter applied in three portions : (a) at the beginning of the operation = *incorporo*, (b) during the operation in order to preserve the fluidity of the *pella* (2) = *ceba*, and (c) at the end (when "la torta esta rendida") to catch all the particles of *pella* (2) and to render it perfectly fluid = *baño* (*comp.* *llapar*), *comp.* *hormiguillo* (2).

**INCRUSTACIÓN**, incrustation ; scale (of boilers, etc.).

**INCUARTACIÓN**, assay. inquartation or quartation.

**INDAGACIÓN**, search, examination.

**INDICACIONES**, indications, *syn.* *señales* (1), *see* *guía* (2) ; for favourable indications in alluvial mines, *see* *azufre* (2), *binches*, *favas*, *feijas*, *mulata*, *pájaro minero*, *segullo*, *tibe* ; for those of vein mines, *see* *azufre* (3), *caramacate*, *guía* (2), *lizote*, *u.* *moco* (3), *palo* (5), *u.* *pinta* (6), *pórfido* (2), *u.* *roca* (3), *vitriofido*.

**INDICADOR**, indicator, gauge, *see* *avisador* ; vent. gas-indicator ; i. de agua, water-gauge (of a boiler) ; i. de cristal, glass water-gauge ; indicator for gold ore, etc., *see* *indicaciones*.

**ÍNDICO, CA**, adj. Indian, *see* *u.* *pala* (3).

**INDIO**, *see* *u.* *trabajo* (2).

**INDUCCIÓN**, el. induction.

**INFECUNDO, DA**, adj. barren or sterile (of rocks, etc.), equiv. It. *infecondo*, *da*.

**INFERNO**, Port. wheel-pit, *see* *cárcamo* (3).

**INFLAMACIÓN**, mech. priming or lighting of gas-engines (Fr. *allumage*).

**INFLEXIÓN**, *see* *u.* *pliegue*.

**INFORME**, report.

**INGA**, *piedra i.*, pyrites, *see* *u.* *piedra*.

**INGENIERÍA** (Port. *engenharia*), engineering.

**INGENIERO** (Port. *engenheiro*), engineer ; i. civil, civil engineer ; i. de minas, mining engineer ; i. mecánico, mechanical engineer.

**INGENIO** (Port. *engenho*), (1) engine, *see* *máquina* ; (2) Zac. Mex. stamping-mill, *see* *u.* *molino* (1) ; Cerro de Pasco, Peru, horizontal water-wheel and Chilian mill combined, the latter below the grindstone (O. F. Pfordte), *comp.* *tabladillo* (2) ; (3) smelting-works, *comp.* *fundición* (3) ; (4) S. Am. a kind of sluice or channel, the sides of which are walled, and the bottom made of stone. There is a cavity at the entrance, then a plane part covered with a thick cloth, rolls of moss and a network of

reeds. At the end of the day these are washed with great care in order to collect the gold adhering to them (Goupillière), *comp.* **canalón** (3).

**INGLETE**, carp. square joint, mitre, diagonal, *see u.* **ajuste** (3).

**INJERTO**, TA, adj. ingrafted ; simple i., the end of a rope spliced round an eye (Molina).

**INJERTO** (graft), splice (Moncada), *see* **empate** (2).

**INMERGENTE**, adj. submerged, as the pole of a plunger pump, *see u.* **bomba** (1), **pistón** (1).

**INSPECCIÓN**, inspection, survey ; superintendence.

**INSPECCIONAR**, to inspect, examine (a mine, etc.).

**INSPECTOR**, surveyor, viewer, inspector, underviewer, overseer.

**INSTALACIÓN**, *see u.* **preparación** (1).

**INSTRUMENTO**, (1) tool [*see* **herramienta**] or instrument ; (2) com. deed.

**INTENDENCIA**, (1) administration, management ; (2) the province over which the jurisdiction of the **intendente** extends, intendency. In Mexico, under Spanish rule, the country was divided into **intendencias**, each of which was subdivided into **diputaciones de minería** or **distritos** (districts).

**INTENDENTE**, intendant or public officer in charge of the public treasury of a province, *see* **intendencia**.

**INTERÉS**, (1) interest ; (2) share ; (3) i. del oro, Ant. Col. the highest sale value of gold, containing \$1.60 (gold) to the **castellano** (Uribe).

**INTERIOR**, adj. interior, underground ; for **transporte i.**, *see u.* **transporte**.

**INTERNACIÓN**, *see u.* **importación**.

**INTERRUMPIR**, el. to break contact.

**INTERRUPCIÓN**, el. break.

**INTERSECCIÓN**, intersection or junction (of veins), *syn.* Peru, **aspa** (7).

**INTERVENTOR**, (1) controller, inspector, superintendent ; (2) in actions relating to proprietorship of a mine, a receiver or trustee, appointed by the judge, to take charge of the mine, and even to work it, until the right of ownership is settled.

**INTRADÓS**, (1) inner side, concave face or soffit of an arch (**arco**), *syn.* **sófito** ; (2) surface, corresponding to (1), of a hewn stone or brick, *see* Fig. 38.

**INTRUSIÓN**, leg. the workings of a mine which have entered those of an adjoining one, *see* **invasión**.

**INUNDARSE**, *see* **aguararse**.

**INVASIÓN**, Mex. a mining trespass (Dwight), *see* **intrusión**.

**INVENTARIO**, inventory.

**INVIERNO**, winter ; **mina de i.**, Ant. Col. alluv. m. a mine which can only be worked in the rainy season, on account of the scarcity or absolute want of water in the dry season, *comp.* **u.** **verano**.

**INYECTOR**, mech. injector, *see* **elevador** (1).

**IPE-JACARANDA**, *see u.* **candeia** (2).

**IR** (to go, etc.), **ir á peña**, Ant. Col. alluv. m. to strike the pay-streak, to touch bottom, *see* **peña** (4).

**ISPABÉ**, Darien, Col. sort of bastard white cedar of large size ; Spaniards made segments of their wheels of **ispabé** (E. W. Woakes).

**ITABOS**, Brit. Guiana, natural canals, connecting rivers (J. H. Powell).

**ITAMBAMBA**, Braz. a plant (? *Solanum* species) whose juice is thought to catch fine gold (Lock), *comp.* **gogo**.

**ITZTLI**, **ITZTLE**, Mex. Aztec name for obsidian (**obsidiana**), of which knives and mirrors were made (Clavijero). "Se beneficiaba en grande, segun aparece por el sin número de tiros abiertos, en el Cerro de las Navajas, cerca del pueblo indio de Atolonilco el grande" (Humboldt).

**IXTAJALES**, Tasco, Guerr. Mex. oxide of iron of an earthy aspect ; at Zacualpan, Mex. sulphide of silver is often disseminated in it ; at Sultepec, Mex. native silver in fine threads and leaves, associated with gypsum, hornsilver and argentite, disseminated in oxides and hydroxides of iron, copper and manganese, *see* **colorados** (1), **tepostel** (1), **plata** (2).

**IXTETE**, *see* **obsidiana**.

**IXTLE**, (1) American aloe, *see* **agave** ; (2) fibre of the **lechuguilla** (**Agave heterocanta**), *see* **u. saco** (1) and **trecho** ; fibre of the **Maguey manso** or **Agave ixtle**, (U.S.A.) "Tampico fiber."

**JABA**, Cuba, a basket made of the leaves of yarey (Velázquez), *see* **canasta**.

**JABALCÓN**, **JABALÓN**, (1) strut, purlin (horizontal timber supporting the rafters used in roofing) ; (2) timb. an inclined strut supporting a stemple, *see* Fig. 49, *see* **tinquería**, *comp.* **riostra** (1), **tornapunta** (1) ; sometimes two inclined stemples are used supported against a plank [**hilera** (2)] in the

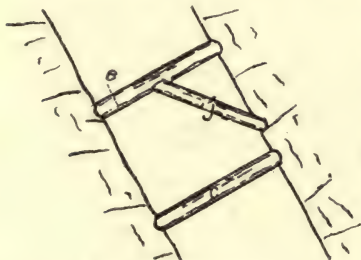


FIG. 49.—Jabalcón (2).

c, **cumbrera** ; e, **estemple** or **riostra** (3) ;  
j, **jabalcón**.



FIG. 50.—Jabalcón (2) or **Ajuste** (3)  
de **cuchillo**.

h, **hilera** or **board**.

centre, the combination being known as **ajuste** (3) de **cuchillo** or de **tejido**, or rafter timbering, *see* Fig. 50 ; (3) Ant. Col. fissure or broken ground in bad roads (Uribe).

**JABALCONAR**, **JABALONAR**, to support the roof of a house with brackets (Velázquez).

**JABÍ**, a hard-wood tree of Yucatan, Mex., incorruptible in water, *syn.* **quiebrahacha** (1).



**JABÓN** (soap), (1) *j. de montaña*, soapstone (*saponita*) or steatite, *syn.*

Guan. Mex. *jaboncillo* (1); (2) *jabones*, Guan. Mex. a friable talcose rock, which swells and falls to pieces on exposure to air, and is very finely scattered with silver ores. It forms the chief mass of the pockets (Ger. *Nester*), and the chief riches of the veins of La Luz district; *jabones* also occur in the Veta Madre, but of a white colour and more calcareous (Tilmann). (3) Villa Nueva, Hond. an extremely friable whitish grey, talcose, clayey rock, containing small fragments of broken, highly siliceous rock, and charged with a quantity of gold and silver sulphides; it occurs in veins traversing trachyte (A. J. Bourdariat); (4) Ant. Col. slickenside, *see plano* (4); (5) *pedra de j.*, Mex. talc, *see talco*.

**JABONCILLO**, (1) Mex. steatite, *see jabón* (1); (2) fuller's-earth (Ponce de León), *see greda* (1); (3) generally clay, resulting from the alteration of "country" rich in ore, thus, that of Tetela del Oro, Puebla, Mex. is fine silver ore (*polvorilla*) mixed with clay (A. del M. de F.), *see formación* (3), *u. pinta* (1), *terrosas*; (4) Potosí, Bol. kaolin (*caolin*) found in small deposits, coating vugs and joint planes (M. Roberts); (5) Chile, nitrate of soda containing streaks of lime, *see u. caliche* (1).

**JACA**, pony.

**JACAL** (formerly *xacal*), Mex. (1) hut (*choza*), either covered with straw, and with a shingle roof (*tejido de tejamanil*), or with pine boards (*tabletas*) in which tools and ore are kept until taken to the *haciendas de azoguería* or *fundición* (Gamboa), *see despensa* (1), *galera* (2); (2) hut or covering (*cubierta*) placed over the shaft, to keep the rains therefrom, and as a protection to the workmen (Gamboa), *comp. barraca*; (3) *ademe de j.*, timb. a method of keeping up waste in an inclined lode, *see Fig. 51*.

**JACARANDA**, Braz. rose-wood tree, used in construction, *see u. candeia* (2).

**JÁCENA**, girder or beam on which joists rest (*viga maestre*); Alicante, Sp. beam 36 *palmos* (about 25 feet) in length and 18 inches square (Acad.); Balears, Sp. spruce beam (Acad.).

**JACINTO**, (1) hyacinth, a transparent red var. of zircon (*circón*); (2) cinnamon-stone, a var. of garnet, *see granate* (1); (3) *j. de compostela*, crystallised quartz (*cuarzo*) of a dark red colour (Acad.); (4) *j. occidental*, topaz, *see topacio* (1); (5) *j. oriental*, ruby, *see rubí* (1).

**JACUTINGA**, Braz. iron ore associated with gold; the vein matter of true fissure veins containing specular iron ore either with granite walls or with slate footwall and granite or porphyry hanging walls. The general appearance of the vein matter is black with white spots, *comp. pedra de ferro*; "the *jacutinga* is composed of micaceous iron ore,

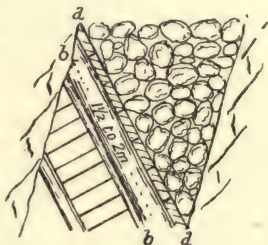


FIG. 51.—Ademe de Jacal  
(after Luis Carrión).

*a a*, camas (7) or roof-lagging;  
*b b*, tapestle or roof support.

brown iron ore, saccharoid quartz, oxide of manganese, iron pyrites, iron glance, and clay in beds striking E. and W., and dipping N. 40°—the gold occurs in shoots which pitch irregularly E. 30°" (E. M. Touzeau); "consists of sandy micaceous and hydrated iron ore, associated with some yellowish talc and an earthy oxide of manganese, the whole having an unctuous touch, and running conformably to the enclosing itabiritic rock, in lines between 2 and 20 cm. thick" (H. K. Scott). *Ety.*—From two Tupi Indian words, *jacu*, bird, and *tinga*, white—the game bird of Brazil, corresponding to the American quail, is black with white specks, and is called *jacutinga* (A. M. Gibson).

**JADA**, *see* *azada*.

**JADE**, jade, *syn.* *piedra nefrítica*, *see* *chalchihuitl* (jadeite), *chalchuites*, *nefrita*, *quitzalitzli* (nephrite), *tecpatl*, *comp.* *majagua* (2) (prehnite); for origin of name, *see u.* *ijada* (2).

**JADIAR**, *see u.* *azada*.

**JAGUA**, Col. (1) a fine powder, of heterogeneous composition, but generally consisting of sulphides; Dr. T. Magin, writing of the veins of Vilachí, Cauca, says: "la arcilla de los respaldos—que es el jagua de los mineros Colombianos—muestra al lavado en la batea mucha pirita y oro libre, el cual proviene de la decomposición de esta," *see u.* *guarda* (1); (2) alluv. m. metalliferous sands, composed for the most part of oxide of iron and titaniferous iron ore (V. Restrepo), hence = black sand, *comp.* *congo* (1); (3) *jaguas*, mech. prep. concentrates, chiefly pyritic, and more or less rich in gold; *jaguas de recorte*, residues in separating the gold from the concentrates, these are usually ground in an *arrastre* (3), producing *moles* (2), *see* *podrir jaguas*, *comp.* *charquiera*, *marmajas* (2).

**JAGÜERO**, Col. alluv. m. vessel for depositing the gold, together with some *jagua* (2), after washing and before the final separation [*see* *cortar* (1)].

**JAGÜEY**, (1) Mex. and Peru, a large pool or lake, *see* *charco* (1); (2) reservoir for rain water, *see* *estanque* (1); (3) Cuba, the *matador liana*, a climbing plant which kills the tree which it clasps (Velázquez).

**JALBEGAR**, to whitewash, *see* *blanquear*.

**JALBEGUE**, whitewashing.

**JALCA**, Peru, elevated plain, occupying the upper part of the mountains, *see* *llano*, *comp.* *pampa*.

**JALES**, Mex. tailings, *see* *cola* (7); "very fine ore, but which must be reduced to *lama* (2), as it contains particles of ore unaltered in composition, although exceedingly small" (Ramirez); Fresnillo, in the *patio* process, the ore-mud from the *lavadero*, containing 0.03 per cent. of silver (Duport), *comp.* *jalsontles*.

**JALMA**, a kind of pack-saddle, *see* *enjalma*.

**JALÓN**, surv. stake with iron ferrule [*regatón* (3)]; ranging-pole; *j. de esquina*, corner stake (of claims), *see u.* *hito*.

**JALSONTLES**, Mex. in the *patio* process, the parts of ore badly ground and which must be re-ground to form *lama* (2) (Gamboa); in Guan.

rich ore is reduced to coarse sand (*jalsontle*), the metalliferous grains are then separated by washing and smelting direct, the operation being called *apartar polvillos*.

**JAMBA**, jamb or jamb-post of a door or window, *syn.* *batiente*, *montante* (4), *pie derecho* [*see u. pie* (5)], *quicial*, *comp.* *dintel*.

**JAMBAJE**, frame of a door or window, *see* *marco* (4).

**JAMARACIÓN, JAMUREO**, Ant. Col. the operation of unwatering *hoyos* (3), *see u. saca* (5).

**JAMURAR**, Ant. Col. to extract water with a *batea*, *see* *chicar*, *comp.* *achicar*.

**JAMUREO**, *see* *jamuración*.

**JANTILLA**, Mex. in the *patio* process, the double-handled ladle into which the melted silver falls from the *craza* (Lyon).

**JARCIA**, cordage ; Mex. fabric or cordage of *ixtle* fibre (Dwight), *see u. costal*, *manto* (1), *u. rosca* (2).

**JARDÍN**, spot which disfigures an emerald (*esmeralda*), *comp.* *yerta*.

**JASPE**, (1) jasper, *syn.* *piedra jaspe*, *pórfido* (3), *see* *diaspero*, *dionisia* (1), *ezteri* ; j. negro, Lydian stone, touchstone (*piedra de toque*) j. *veteado*, riband jasper ; (2) j. *ópalo*, *see u. ópalo* ; (3) veined marble (*mármol*).

**JASPEADO, DA**, adj. spotted, like jasper ; marbled, mottled, variegated (*Velázquez*).

**JAULA**, (1) drum of a horse-whim [*malacate* (1)], *see u. tambor* (1) ; (2) j. de *extracción*, hoist. cage, *syn.* *Pachuca*, Mex. *aparatos*, *caja* (7), *elevador* (2), equiv. Fr. *cage d'extraction*, cage *guidée*, Ger. *Fördergestell*, *Förderkorb*, *see u. cerrojo*, *cubierta* (3), *piso* (6), *comp.* *bastidor* (3) ; j. de *seguridad*, safety-cage, *see* *paracaídas* (1).

**JEBE**, (1) rock-alum, the purest kind of alum (*alumbre*) ; (2) Peru, *caoutchouc* or rubber, *see* *caucho*.

**JEFATURAS DE HACIENDA**, Mex. Sub-Treasury Offices, before which every mine-owner must present his title-deeds, etc.

**JEFE**, chief or head ; j. de *construcción*, foreman, *see* *capataz* (3) ; inspector of works ; chief engineer ; j. de *estación*, station-master ; j. de *maquinaria*, chief (mechanical) engineer (Ponce de León) ; j. *municipal*, *mayor* (*alcalde*) ; j. *político*, prefect (*prefecto*).

**JENIQUÉN**, sisal hemp. *see* *henequén*.

**JERGA**, coarse cloth ; a blouse of woollen cloth used by miners, *see* *vestido*.

**JÍCARA**, (1) gourd-tree (*Crescentia cujete*), Aztec, *xicalli* (*Velázquez*) ; (2) (chocolate cup) Mex. a small vessel or bowl [usually made from (1)] in which the assay sample is washed and then amalgamated (T. Egleston). In Michoacan the Indians paint them black inside and red outside—in use in the Guanajuato haciendas in 1895, *see* *guaje*, *pilche*, *u. pileta* (2), *u. tentadura* (1), *comp.* *batea*.

**JITO**, the channel by which melted metal runs, and the hole where it enters the mould (*Velázquez*) ; gate in casting (Dwight).



- JORFE**, (1) retaining-wall, generally of dry stones, *see* muro (1); (2) a high solitary rock; a tor (Velázquez), *see* peñasco.
- JORNADA** (day's journey), (1) a day's work; (2) a day's wages, or pay (paga), *syn.* jornal (2), Mex. raya (2); (3) shift, *see* relevo.
- JORNAL**, (1) day-work, day-labour; á jornal, by the day; trabajo á j., day-labour, *comp.* tarea (1); (2) day's wages, *see* jornada (2); (3) shift, *see* relevo; (4) daily product of a mine by each peon; (5) com. journal or diary.
- JORNALAR, JORNALEAR**, Ant. Col. to arrange with some one to work by the day, *syn.* ajornalar.
- JORNALERO, RA**, adj. mina or veta jornalera, Ant. Col. a mine or vein which covers expenses and produces only insignificant profits (Uribe).
- JORNALERO**, day-labourer, *syn.* Mex. rayado, *see* u. trabajador.
- JORONGO**, (1) a small basket, *see* canasta; (2) a blanket, *see* manta (1).
- JUAGADA**, Ant. Col. alluv. m. a deposit in which there is neither sand nor gold, only stones (Uribe).
- JUAN BLANCO**, Col. (1) platinum (platino) found in gold placers; (2) mica, *see* mica (1).
- JUEGO**, (1) set or gear; j. de barrenas (2), blast. set of drills; j. de tubos, pump. a column or set, *syn.* flete (3), playa (2); j. de bomba, pump-gear, *see* habilitación (2); (2) mech. motion or play; j. de la vía, transp. the play of a pair of wheels between rails, *see* leva (2); (3) j. de nuez, mech. ball and socket joint (Velázquez); (4) manner of acting of an engine (Velázquez).
- JUEZ**, judge; j. de primera, segunda, ó tercera instancia, judge of the first, second or third court of claims, respectively.
- JUGO**, *see* ayuda (1).
- JUICIO**, law-suit.
- JUMOS**, Ant. Col. scarcely visible particles of gold found in a batea after panning. "No haber ni jumos de oro-locución de los cateadores cuando el cateo no da pinta alguna" (Uribe).
- JUMPE**, *see* humpe.
- JUNETA DE TRÍLHOS**, Port. fish-plate, *see also* fixa.
- JUNTA**, (1) each lateral surface of a square-hewed stone (Velázquez); (2) a nearly vertical joint in stratified rocks (Fr. pied-droit); plano de j., joint-plane, *see* juntura (2), u. plano (2); (3) j. de terrenos, a fault or break in coal-beds, etc. (Fr. crain), *see* falla (1); (4) carp. and mech. joint; coupling; j. de compensación, j. de dilatación, pump. compensation-joint, expansion-joint; (5) j. libre, bor. free joint, free-falling apparatus, *syn.* aparato de caída libre, corredera (4), *see* u. aparato, lengua (1); (6) a Board, Congress, Assembly or Council; J. de Comercio, Board of Trade; juntas, Mex. conciliatory meetings called by the Mining Agents to settle disputes about mining property, etc.
- JUNTAR**, to join, mech. to couple, *see* empalmar (2), enganchar; to join (of veins), *see* empalmar (4).

**JUNTERA**, carpenter's plane, *see* cepillo (1).

**JUNTURA**, (1) scarf, joint, *see* junta (4); (2) j. de estratificación, geol. divisional plane or joint, *syn.* aguja (2), Mex. cuartón (3), división (1), *see* fractura (1), junta (2).

**JUQUERO**, Peru, thief [ladrón (2)] who takes ore from the vein (Dwight).

**JUSTIPRECIAR**, to estimate, value, appraise.

**JUSTIPRECIO**, appraisement, just valuation.

**JUZGADO**, court of justice.

**L.A.B.**, "libre á bordo," free on board (f.o.b.).

**LABERINTO**, (1) mech. prep. labyrinth, *syn.* rigola (2) confused irregular workings, *see* grecas.

**LABIO**, (1) lip of a furnace [horno (2)]; (2) labios, sides of a fissure (grieta), *syn.* caras (8).

**LABOR**, (1) work, *see* trabajo (1); (2) mine working or work, *syn.* excavación, l. de mina, l. minera, l. subterránea, *see* minado, obra (2), trabajo (2); working-place, *syn.* trabajo de arranque; labores de beneficio, winning workings; labores de cantera, stone-quarries; labores de hacienda, all workings in a mine not let to tributers; labores de reconocimiento, exploratory workings; labores preparativas or auxiliares, development, forewinning workings; (3) a particular method of working in mines, *see* u. faja (3), método, laboreo; l. á cielo abierto, quarrying, *see* cielo (3); l. atravesada or á través, transverse working, cross-working or cross-cut method (Ger. Querbau); l. de portadas unidas, Altenburg method of spilling as distinguished from the Silesian; l. de testers (3) or de realce (2), overhand stoping; l. en anchurones or en cámaras, working large masses in stages, equiv. Fr. méthode des cloisons et estaus, Ger. Stockwerksbau, *see* u. piso (1); l. en avance or de franqueo, spilling, equiv. Fr. poussage, *see* u. apeo (1), carrera (8), u. portada; l. en bancos or rebajo (2), underhand stoping; l. en grandes tajos, longwall method, *see* u. tajo (4); l. en pilares, pillar-working; l. mixta, mixed method, *e.g.*, that employed for working the Almaden quicksilver deposits (Molina); l. por hundimiento, English longwall (Ger. Bruchbau); l. somera, costeaning (Venator); (4) labores altas, Col. placers above the level of the waters; labores bajas, Col. placers situated at the highest or lowest level of the waters; (5) minas de labor, *see* u. bajo, ja; (6) one thousand tiles or bricks.

**LABORAÇÃO**, *see* laboreo.

**LABORAR**, Port. to work mines, *see* trabajar.

**LABORATORIO**, laboratory, *see* taller (2); Peru, conical shaft of aludel furnace; shaft of blast-furnace, *see* cuba (4); part of reverberatory furnace from bridge [puente (2)] to flue [tragante (4)].

**LABOREO**, mining or the art of mining (l. de minas), *syn.* beneficio (1), explotación, minería (1), equiv. Port. laboração, Fr. exploitation des mines, Ger. Bergbaukunde; "arte de explotar las minas, haciendo las

labores ó excavaciones necesarias, fortificándolas, disponiendo el tránsito por ellas, y extrayendo las menas aprovechables" (Acad.); "el conjunto de preceptos que deben seguirse para aprovechar la riqueza mineral terrestre, con la debida seguridad personal y con la mayor economía y prontitud posible" (Molina); particular method of working in mines, *see* labor (2); 1. á cielo abierto, quarrying, *see* cielo (3); 1. de crestones, surface working; 1. por cuadros, panel working.

**LABRA**, (1) working or chiselling stone; (2) cut or slice in working away pillars, *see* faja (3).

**LABRADO**, DA, pp. of labrar; labrado de cielo, *see* comido; plata labrada, wrought silver.

**LABRADOR**, piedra de l., greenstone.

**LABRAR**, (1) to work a mine, *see* trabajar; (2) to work metals; (3) to dress stones; (4) to hew wood; (5) to construct buildings.

**LADERA**, (1) declivity, *see* pendiente (1); (2) Mex. side-track (Dwight); (3) laderas, geol. sides or wings of a saddle [silla (4)] when highly inclined (Fr. dressants), *comp.* planicie (2).

**LADO** (side), Mex. side or lateral superficial limit of a vertical lode, *comp.* respaldo.

**LADRILLADOR**, bricklayer, *syn.* enladrillador.

**LADRILLAL**, **LADRILLAR**, (1) brick-field; (2) *see* ladrillera (1).

**LADRILLERA**, (1) brick-kiln, *syn.* ladrillal (2), ladrillar (2), *see* u. horno (1), *comp.* adobería; (2) Mex. in the patio process, the iron or stone mould in which the silver is poured to form the bar [barra (3)] (G. F. Lyon), *see* rielera.

**LADRILLERO**, brick-maker.

**LADRILLO**, brick; 1. de arcilla, clay brick; 1. de fuego, fire-brick; *comp.* adobe.

**LADRÓN**, (1) lock or sluice-gate, *syn.* compuerta (2); (2) gold-thief, etc., *see* huaillaripa, juquero, longanas.

**LADRONERA**, sluice-gate, *see* compuerta (2).

**LAGA**, a large black bean of the Orient which serves for weighing gold (Velázquez).

**LAGARTO**, Guan. Mex. timb. prop, single-prop, *see* mono (2).

**LAGE**, (1) Port. flag, freestone (piedra franca or de talla); lages, Braz. loose masses of rock of a peculiar flaggy appearance, considered as an indication of manganese ores near the surface; consist of thin and usually regular alternations of hard black bands of iron oxide with soft yellow ochreous bands (H. K. Scott), *see* u. pedra.

**LAGO**, lake, "una gran masa permanente de agua depositada en hondadas del terreno, con comunicación al mar ó sin ella" (Acad.), *see* laguna, lagune; 1. salado, salt lake or marsh; 1. interior, *see* estanque (4).

**LÁGUENA**, alteration and degradation of argillaceous schists by air and water (Molina).



**LAGUNA**, (1) pond, lake (**lago**), lagoon, marsh, "depósito natural de agua, generalmente dulce y por lo común de menores dimensiones que el lago" (Acad.); in Span. Am. practically synonymous with **lago**, *see* **ciénaga** (1) and (2), **marisma**; 1. *de la brea*, *see* **chapopote**; (2) an uneven country, full of marshes (**Velázquez**).

**LAGUNE**, Mex. a small lake (**lago**).

**LAJA**, thin flat stone [**lancha** (1)], bed, layer or sheet, *see u. cobija* (2), *comp. losa* (1); **estructura en lajas**, geol. flaggy structure; 1. **chavera**, Cartagena, Sp. highly decomposed schist (**pizarra**) used for filling (**Moncada**).

**LAMA**, (1) dust or ore in mines (**Velázquez**); Pachuca, Hid. Mex. ore occurring in the veins in a fine state of powder, generally much more common on the walls, then forming **guardas** (1); (2) mech. prep. slimes (Ger. **Schlamm**); Mex. in the **patio** process, slimes or ore ground into fine paste by the **tahonas** or **arrastres** (3), *see u. barro* (1), *u. jalsontle*, **lamero** (1) and (2), **lodo**, **tepestate**, *comp. u. relave*; (3) moist clay used by miners for sticking candles to their hats, etc.; (4) Andalusia, Sp. fine sand [**arenilla** (1)] used for mortar; (5) Tipuani, Bol. rough pebble-beds forming a false bed-rock to gold-bearing alluvial deposits, and known locally as "lama-benches" (M. Frochot), *see roca* (7), *comp. binches*.

**LAMERO**, Mex. (1) slime-pit, walled receiver or circular walled space for the ground slimes or **lamas** (2), *syn. cajetes*; in the **patio** process, after grinding, the ore is deposited in the **lamer** (1), where, by evaporation, the **lamas** acquire the proper consistency; from the **lamer** the **lama** is carried to the **patio**, where it is made into a heap [*see lamero* (2)]; (2) **lama** (2) merely thickened by admixture with **sal tierra**; when **magistral** and mercury have been added to the mud-heap it is called a **torta**, *comp. u. montón* (1).

**LÁMINA**, (1) thin plate or sheet of metal, *see chapa* (1), **placa**, **plancha** (2) and (3); 1. *de hierro*, sheet-iron; **láminas**, gold-mill. copper plates; (2) gold-mill. screen, *see compuerta* (4); (3) scale of gold; (4) 1. *de pizarra*, slab or plate of slate, a slate, *comp. laja*.

**LAMINADOR**, met. rolling-mill.

**LAMINAR**, to roll or beat metal into sheets.

**LAMOSO** (adj. slimy), (1) **lamosos**, Asientos, Aguascalientes, Mex. copper ores in which clay and **jaboncillo** (1) or **steatite** abound as the matrix (**Ramirez**), *comp. duros*, **pastosos**, **yesosos**; (2) Mex. in the **patio** process, ore-mud which is very sticky and clayey, *comp. u. seco*, *ca.*

**LAMPA**, Peru, shovel, *see pala*.

**LAMPADA**, Peru, shovelful.

**LAMPADA**, Port. lamp, *see lámpara*.

**LÁMPARA**, lamp, equiv. Port. **candeia**, **candea**, **lampada**, Fr. **lampe**, Ger. **Lampe**; 1. *de mina*, 1. *del minero*, miner's lamp, equiv. Fr. **lampe à feu nu**, Ger. **Grubenlampe**, *syn. candelero* (5), **mariposa** (1), *see candil*, **candileja** (1), **machina** (4); for parts of, *see agarradero*, **atizador** (5),

- boquilla (1), cebolla, *u.* mechero, *u.* tubo (1); 1. de seguridad, safety-lamp, equiv. Fr. lampe de sûreté, Ger. Sicherheitslampe; for parts of, *see* armadura (6), candileja (2), coraza, fanal, *u.* garabato, gorra (2); *comp.* linterna (1).
- LAMPAREROS, c.m. lamp-men (in charge of the safety-lamps).
- LAMPAZO, Mex. an instrument formed of green branches, which, placed at the end of a long pole, serves to modify the excess of flames in a smelting-furnace [horno (2)] (Gamboa).
- LAMPISTERÍA (from Fr. lampisterie), c.m. lamp-station.
- LAÑA, (1) cramp-iron, *see* gato (2); (2) iron hook for joining ladders [escalas (1)] together (Venator), *see* gancho (1).
- LAÑAR, to fasten two things together with a cramp-iron [laña (1)].
- LANCERA, Mex. timb. an inclined stull (Dwight), *see* estemple.
- LANCHA, (1) a thin and flat stone, *see* laja; (2) a sort of hard freestone (piedra arenosa); (3) barge or lighter, *see* lanchón.
- LANCHAR, quarry yielding flat stones [lanchas (1)].
- LANCHE, Huelgáyoc, Peru, kind of timber used in mines—average duration in moist places is fifteen years (Santolalla), *see also* quinal.
- LANCHERO, bargeman, lighterman, *see* lanchonero.
- LANCHÓN, lighter, *syn.* alijador, gabarra, lancha (3), lastra (1).
- LANCHONERO, lighterman, *syn.* lanchero.
- LANDA, level and sandy plain (llano), with scarce vegetation (Bárcena).
- LAPA, Port. footwall, *see* bajo (3).
- LÁPIZ, (1) black lead or plumbago, *syn.* lápiz plomo, *see* grafito; (2) black chalk; 1. encarnado, 1. rojo, red chalk or red ochre; *see u.* ocre; (3) black-lead pencil.
- LAPIZAR, plumbago mine or quarry.
- LAQUES, Peru, (1) deposits of water in a vein; (2) druses, *see* drusa.
- LARGUERO, (1) cheek-piece of a ladder [escala (1)], *syn.* montante (2); (2) largueros, Zac. Mex. and S. Am. timb. wall-plates, (Nevada, U.S.A.) sill-timbers or sills, *syn.* Pachuca, Hid. Mex. cabezales (3) or machos (8), maestras (2), Guan. Mex. puentes (6), equiv. Ger. Jochern, *comp.* cruceros (3); (3) lintel of a door or window, *see* dintel; (4) 1. durmiente, mud-sill of a pulley-frame, etc., *see* muertos; (5) transp. longitudinal sleeper, *comp.* durmiente (1).
- LÁRICE, larch-tree, *see* alerce (1).
- LASCA, small and thin fragment of stone, *comp.* astilla (3).
- LASTRA, (1) lighter, *see* lanchón; (2) Serrata de Lorca, Sp. bed of native sulphur (azufre), upper one = 1. de arriba, middle one = 1. de abajo or de fuego, lowermost (not worked) = 1. de agua (Molina).
- LASTRE, (1) stone of bad quality, and in cracked and broken sheets (lajas), found at the surface of quarries, and suitable only for rubble-work (mampostería (1)) (Acad.); (2) ballast, *see* balaste.
- LATA, (1) tin-plate, tinned sheet-iron, *syn.* hoja (4) de lata; (2) carp. lath, batten, equiv. Port. tala, *see* listón; poner latas en las techumbres, to lath (Velázquez); latas, timb. laths, *see* pilote (2);

- (3) beam, generally round and unpolished, of less size than the *cuartón* (1) (Acad.), *see viga*.
- LATIGAZOS**, hoist. and u. haul. brusque movements or "jerks" given to rope whether of oscillation or traction, *syn.* S. Sp. *barzonazos* (Molina).
- LATITUD**, (1) breadth, width; (2) total extension of any kingdom, province or district; (3) geogr. latitude or distance of any point from the equator; (4) surv. latitude (northing or southing), *comp.* longitud (3).
- LATÓN**, (1) brass; 1. *blanco*, German silver; 1. *en hojas* or *en planchas*, sheet-brass; (2) *latones*, timb. large and irregular branches of oak used for lagging and making platforms or sollars, etc. (Gillman), *see u.* tapestle, *comp. u.* *rama* (1).
- LAUREL**, (1) laurel; (2) laurel-comino, *see comino*; (3) Col. a wood of this name used for making boards.
- LAVA**, (1) *see lavadura*; (2) geol. lava, *see escoria* (3), *tetzontle*.
- LAVADA**, *see lavadura*.
- LAVADERO**, (1) any site for washing ore or mineral [Braz. *lavra* (1)]; place where gold is separated from the sand; dressing-floor, *see hacienda* (4); Mex. washing-house containing one or more *tinias* (Dr. Percy); (2) Peru, Chile, placer (placer); *lavaderos auríferos*, gold-placers; (3) Mex. mech. prep. in the patio process, the box-settler, which replaces the *tina* (1) in some haciendas, *see* Egleston, I. 298, *comp.* *chuza*; (4) mech. prep. any appliance for dressing minerals, *e.g.*, amalgam-washer, buddle, settler; 1. *cernidor*, jig, *see u.* *criba*; 1. *de báscula*, sleeping-table, *see u.* *mesa* (1); 1. *de carbón* or *mecánico*, coal-washer; 1. *de oro*, gold-washer; 1. *inclinado*, strip; for the *lavaderos* used in the Arg. *see* Fig. 52 (after J. Minnaert), *see u.* *artesa*, *u.* *cajón* (5); (5) the act of washing or dressing ores, etc.; 1. *de oro*, alluvial gold-washing, *see lavadura*.
- LAVADO**, *see lavadura*.
- LAVADOR, RA**, adj. *see u.* *batea*.
- LAVADOR**, (1) man employed in cleansing amalgam, etc.; 1. *de minerales*, ore-washer; 1. *de oro*, gold-washer, *see barequero*, or *mazamorrero*, *chispiador*, *playero*; (2) Mex. blast. a rod, used in drilling, to keep a wet hole clean. The rod is made by striking the end of a long fibrous stick against a harder substance until it is flat and soft (Dwight).
- LAVADURA**, washing, gold-washing, *syn.* lava (1), *lavadero* (5), *lavada*, *lavado*, *lave*.

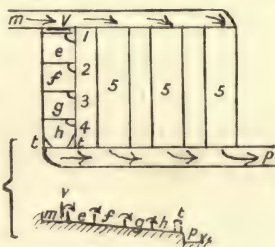


FIG. 52.—Lavadero (4)  
(after J. Minnaert).

1, 2, 3, 4, tazas móviles;  
5, 5, 5, canalejas (3).



- LAVAR**, to wash ores, etc. ; Ant. Col. alluv. m. to collect and work the whole product of a *barredura* (1) (Uribe).
- LAVE**, Mex. in the patio process, washing the *torta*, *see* *lavadura*.
- LAVERÍA**, dressing-floors, *see* *hacienda* (4).
- LAVRA**, Braz. (1) place where the operation of washing is conducted, *see* *lavadero* (1) ; (2) small placer, *see* *placer*.
- LAZADA**, slip-knot, *see* *lazo* (1) ; running noose.
- LAZADOR**, (1) he who catches with the lasso [*lazo* (2)] ; (2) *lazadores*, Mex. persons employed to collect workmen for a mine on account of their scarcity, *syn.* *recogedores*, *comp.* *enganchador* (2).
- LAZAR**, Mex. to catch with a lasso.
- LAZO**, (1) bow, a slip-knot, *see* *lazada* ; (2) lasso, a light cord of fibre used in catching cattle, etc., *syn.* *mangana*.
- LECHADA**, very fine mass of lime or gypsum, or of lime and sand, or of gypsum and earth (Acad.) ; lime slaked or dissolved in water ; white-wash, *syn.* *revoco*, *revoque* (2).
- LECHE** (milk), (1) Mex. blanching of coined silver ; (2) *l. de luna*, calcareous clay (Ponce de León), *see* *arcilla* ; (3) *l. de tierra*, magnesite ; (4) *l. fósil de luna*, mineral agaric (Ponce de León), or deposit of carbonate of lime, formed in fissures of limestone.
- LECHECILLA**, Tasco, Guerr. Mex. a kind of limestone (*caliza*), *see* *u. techichil*, *comp.* *tenestel*.
- LECHEDOR**, (1) Peru, huantajaita, containing 11 per cent. of AgCl and 89 per cent. of NaCl (Domeyko) ; “ when a stone impregnated with the mineral is moistened, there is formed on the surface a milky substance, which blackens in the light ; and hence the miners of Peru designate it *lechedor* (Dr. Percy) ; (2) Atacama, Chile, a decomposed mass of vein-stuff and country-rock, highly impregnated with chlorides, iodides, and other salts of silver (G. Berg).
- LECHO** (bed), (1) bed of a river, *see* *álveo* ; (2) thin bed, layer or stratum (*estrato*), *see* *capa* (1), *comp.* *banco* (3) ; (3) *l. de fusión*, met. fusion-bed or area in a furnace [*horno* (2)] ; (4) met. smelting-mixture as distinguished from fuel (coke or charcoal), *see* *carga* (4) ; (5) floor of a wagon or cart, *see* *cama* (1) ; (6) surface of a stone or brick against or on which another one is placed, *see* Fig. 38.
- LECHOSOS**, *see* *u. ópalo*.
- LECHUGUILLA**, *see* *ixtle* (2) *u.* *saco* (1).
- LÉGAMO**, slime, *see* *lodo*.
- LEGAMOSO**, SA, adj. slimy, *see* *lodoso*, SA.
- LEGÍTIMAS**, Real del Monte, Hid. Mex. veins having an east and west trend (*vespertinas* of the Germans) ; those having a north and south trend are called *transversales* (*septentrionales* of the Germans).
- LEGÓN**, a small scraping-shovel or scraper [*azadón* (3)] used underground, *syn.* *rable*.
- LEGUA**, league ; in Sp. = 5572·7 m. or 3·462 Engl. miles ; in Mex. =

4190 m. or 2·604 Engl. miles ; in Cuba = 4240 m. or 2·635 Engl. miles ; in Braz. =  $3\frac{3}{4}$  Engl. miles ; for Col. *see u. granadina* ; *see topo.*

**LEITO**, Port. bed of a river, etc., *see álveo.*

**LEJÍA**, lixiviation or leaching, *syn. lejivación, lixiviación, see u. artesa* ;  
1. madre, mother-liquor or lye.

**LEJIVACIÓN**, *see lejía.*

**LEJIVAR**, to leach or lixivate.

**LEÑA** (Port. lenha), firewood, *syn. combustible de madera, see burro* (5),  
hornija, macate (2), madrona, *u. medida, raberón, rastra* (2) ; wood,  
timber, main trunk of a tree.

**LEÑADOR** (Port. lenhador, lenheiro), (1) woodcutter or woodman, *syn.*  
cortador de leña ; (2) dealer in wood or firewood, *see leñero* (1) ; (3)  
Mex. workman who supplies firewood to the smelting-furnace (Gamboa).

**LEÑAR**, to cut wood ; to square timber.

**LEÑAZGO**, pile of wood or timber.

**LEÑERA**, (1) wood-shed or place for firewood ; (2) timber-yard, *see leñero* (2).

**LEÑERO**, (1) timber-merchant, etc., *see leñador* (2) ; (2) timber-yard,  
*syn. leñera* (2).

**LENGUA** (tongue), (1) bor. the lower portion of a slide-joint, or the  
upper portion of a free-falling cutter (Gillman), *see junta* (5) ; (2)  
mech. prep. the movable part of a Blake's crusher (*quebrantador*),  
*comp. mandíbulas* ; (3) mech. prep. the cam [*cama* (3)] of a stamp,  
or the tooth [*diente* (2)] of an axle [*principal* (2)] in native mills ; (4)  
Ant. Col. in the *ceja* (2), a considerable portion of gold which forms  
in the shape of a tongue (Uribe) ; (5) Mex. in a *patio* formed of boards,  
a tongue or long narrow strip of wood, 0·013 m. thick and 0·052 m.  
wide, introduced between two adjoining planks to form a joint ; (6)  
assay. tongue or needle of a balance, *syn. fiel, lengüeta* (1) ; (7) clapper  
of a bell ; (8) 1. *de buey*, broad hoe (Ponce de León), *see azadón* (1).

**LENGÜEBUEY**, Ant. Col. a rock whose form and roughness imitates  
the tongue of an ox (Uribe) — (?) trachyte (*traquita*).

**LENGÜETA**, (1) needle of a balance, *see lengua* (6) ; (2) mech. feather,  
thin wedge, *see cuña* (1) ; (3) 1. *móvil*, surv. slide-rule at one end of a  
rod for measuring a base-line ; (4) *see u. ranura.*

**LEÑO** (Port. lenho), (1) block, log, trunk [*tronco*] of a tree ; any piece  
of firewood or timber ; *see madera, punta* (10) ; (2) woody fibre.

**LEÑOSO, SA**, adj. woody, ligneous, *see u. asbesto.*

**LENTE**, lens ; geol. lenticular mass, *see lenteja.*

**LENTEJA**, lenticular mass [*masa* (1)] of ore or mineral, *syn. Peru,*  
*cocha* (2), *cuenta* (3), *lente, see manto* (3), *pez* (3).

**LENTO, TA**, adj. slow ; **explosivos lentos**, blast. explosives which burn  
slowly (*e.g. gunpowder*), *comp. u. vivo, va.*

**LESIÓN**, leg. damage caused by the price of a property being too low,  
etc.

**LETRA**, letter ; 1. *de cambio* (3), bill of exchange.

- LEVA**, (1) mech. cam, *see* **cama** (3) ; (2) l. del bocarte, tappet of a stamp-mill, *syn.* **aspa** (1), **sobarbo** (2), equiv. Fr. **mentonnet** ; (3) play of a piston, *see* **juego** (2).
- LEVADIZO**, *see* **punte** (8).
- LEVADOR**, mech. cam, *see* **cama** (3).
- LEVANTADA**, geol. upheaval, *see* **levantamiento** (2).
- LEVANTAMIENTO** (elevation), (1) l. de planos (1), surveying, *see* **agrimensura** ; (2) geol. upheaval, uplift, *syn.* **levantada**, **solevantamiento**, **sublevación** ; (3) c.m. creep.
- LEVANTAR**, (1) l. planos, to survey, *see* **medir** (2) ; (2) l. vapor, to get up steam.
- LEVANTE**, (1) met. operation of taking up the tubes (**alvecas**), and lines of **aludeles**, in order to clean them out and collect the mercury (Acad.) ; (2) Mex. breast of a stope ; **al levante**, overhand stoping (Dwight), *see u.* **testero** (3).
- LEY**, (1) law ; l. de minas, l. minera, law of mines, *see* **código**, **derecho** (1), **ordenanzas** ; (2) proportion of metal in any ore ; l. de oro, l. de plata, proportion of gold or silver in the ore, yield or grade, *syn.* l. de metal, **contenido metálico** ; l. media, average grade ; (3) legal standard of quality, weight or measure ; l. de oro fino, fineness of gold or standard ; **plata de l.**, **oro de l.**, standard silver or gold, *see* **obrizo**, *u.* **tenor**, *comp. toca* (2).
- LEYENDA**, geol. legend (Fr. **légende**).
- LIA**, thin bass-rope ; in Mex. rope or material used to attach the mullers [**voladoras** (3)] to the **espeque** (1) and **cruz** (1) of the **arrastre** (3), *see* **cuerda** (1).
- LIBRA**, (1) one pound (weight) ; one l. castellana or Span. pound = 1.0143 lb. avoird. ; the libra of Castile = 1.0161 lb. avoird. ; (2) l. esterlina, one pound sterling.
- LIBRAMIENTO**, warrant, order for funds ; warrant for payment for bars of gold or silver delivered at the mint ; com. draft, *see* **libranza**.
- LIBRANZA**, bill of exchange, warrant, order of payment ; com. draft, cheque, *syn.* **giro**, *see u.* **libramiento**.
- LIBRAR**, to give a warrant or order of payment ; com. to draw.
- LIBRE**, adj. free ; l. de agua, pump. " in fork " ; *see* **L.A.B.**
- LIBRETA**, memorandum-book ; surv. note-book ; l. de gabinete, office note-book ; l. de mina, mine note-book ; *see* **libro**.
- LIBRO**, book, *see* **libreta** ; l. borrador, *see* **borrador** ; l. copiador, copying-book ; l. de agrimensor, surv. field-book ; l. de caja, cash-book ; l. de cuentas, account-book ; l. de facturas, invoice-book ; l. de inventarios, inventory-book ; l. de memoria, memorandum-book ; l. diario, diary ; l. maestro, l. mayor, ledger, *syn.* Port. **livro mestre**, Fr. **grand livre**, Ger. **Hauptbuch** ; *see u.* **matrícula** (1).
- LIENZA**, (1) narrow strip of any cloth ; (2) surv. measuring-tape, *see* **cinta** (1).
- LIENZO**, linen ; canvas ; l. alquitranado, vent. brattice-cloth.



**LIGA**, (1) alloy for gold and silver ; 1. *de metales*, alloy, *see* *aleación* , *tumbaga* ; (2) Mex. smelting-ore ; the sulphides of lead are called *plomoso*, *relumbroso*, *soroche*, *reluciente*, *tescatete*, and *azul plomilloso*, iron pyrites is known as *bronce* and *bronce chino*, copper pyrites as *bronce dorado*, and both are named *polvillos* (Dahlgren) ; (3) Potosí, Bol. galena (M. Roberts), *see* *carne de vaca*, *chini-liga*, *galena* ; (4) Mex. any ore that can be used as a flux, thus iron ores in some localities are known as *ligas*, *see* *fundente*.

**LIGADURA**, mech. an iron wire which binds the strands of a wire cable (*Velázquez*).

**LIGAR**, to alloy gold or silver for coinage.

**LIGNITO** (Port. *lenhite*), lignite or brown coal, *syn.* *carbón pardo*, *madera fósil* ; 1. *leñoso*, lignite proper.

**LIMA**, file ; *see* *bastarda*, *cola* (2), *escofina*, *limatón*, *raspa* (1) ; 1. *de media caña*, or *media caña* (2), half-round file.

**LIMADURA**, (1) act of filing ; (2) *limaduras*, filings, *see* *granalla* (2) ; (3) Mex. in the *patio* process, refined silver, *syn.* *secas* (2) ; (4) Mex. in the *patio* process, silver amalgam in a finely divided condition, *see* *ceja* (1), *u.* *tentadura* (1), *comp.* *polveo*. NOTE.—Floured quicksilver is known as *lis*, sometimes, however, quicksilver appearing in globules at the edge of the amalgam in the *tentadura* is called *limadura*.

**LIMAR**, (1) to file ; to cut with a file ; (2) *see u.* *pasilla*.

**LIMATÓN**, coarse round file (*lima*).

**LÍMITE**, boundary, *see* *lindero*.

**LIMO**, slime, mud, *see* *lodo*.

**LIMOSO**, **SA**, adj. slimy, *see* *lodoso*, *sa*.

**LIMPIA** (cleansing), (1) clearing out rubbish or deads from workings, *syn.* *destierre de labores* (2), *see* *limpiar* (3) ; (2) deads or low-grade ore, *see* *desecho* (3) ; *caja* (18) *de l.*, space filled with deads or low-grade ore, or walled with deads ; *salón de l.*, *see* *jacal* (3).

**LIMPIADOR** (cleanser), (1) mech. prep. clobber, ore-sorter, *see* *apartador* ; (2) bor. tool for cleaning borehole, *e.g.*, auger (*cuchara* (2)), ball-valve sludger [*campana* (7)].

**LIMPIAR**, (1) mech. prep. to cob [*see* *apartar* (1)], clean or cleanse ; (2) gold-mill. to clean up, *see* *barredura* (2) ; (3) to clear out the rubbish of a mine, *syn.* *desaterrar*, *descombrar*, *deszafrar*, *comp.* *desmontar* (2).

**LIMPIEZA**, *see* *registro* (2).

**LIMPIO**, **IA**, adj. clean, free ; *tierra limpia*, even, flat, country.

**LIMPIO**, mech. prep. clobbered ore, picked ore, *see* *pepena* (2).

**LINCHES**, Mex. saddle-bags made of the fibre of the maguey (*Velázquez*) or agave.

**LINDAR**, to bound.

**LINDE**, *see* *lindero*.

**LINDERO**, boundary ; boundary or limit of a claim or mine, *syn.* *co-marca* (2), *límite*, *linde*, *línea* (3), *término* (2), *comp.* *guardaraya* (1), *mojón* (1).

- LÍNEA**, (1) line ; 1. *de base*, surv. base-line, *comp. plano* (6) ; 1. *de demarcación*, boundary-line ; 1. *de peones* (5), timb. line or series of props ; 1. *neutra*, surv. neutral line, as determined by the declination needle (Molina) ; equator, equinoctial line ; (2) 1. *férrea*, *see vía férrea* ; (3) line or twelfth part of an inch, ordinary Span. line = 1.963 mm. line of Burgos, Sp. = 1.935 mm., *see vara* (1).
- LINGOTE**, ingot, a mass of gold or silver ; 1. *de plomo*, sow or pig of lead, *see barra* (3), *bloque*, *galápago* (3), *marqueta*, *metapiles* (2), *palacra* (2), *plancha* (1).
- LINGOTERA**, ingot-mould, *see rielera*.
- LINGUETE**, mech. pawl or ratchet, *see u. fiador* (2).
- LINTERNA**, (1) lantern ; 1. *de sajonia*, Saxon miner's lamp, *see farol*, *lámpara* ; (2) mech. lantern-wheel, *see linternilla* (3).
- LINTERNILLA**, (1) small lantern ; (2) drum of a *malacate* (1) or horse-whim, *see u. tambor* (1) ; (3) lantern-wheel or large vertical wheel of a stamping apparatus, *syn. linterna* (2).
- LIPIS**, blue vitriol, copper sulphate, *syn. piedra l.*
- LIPTA**, Bol. ash-coloured or grey silver ores accompanying tin lodes (Dwight), *see u. estaño* (2), *plata* (2).
- LIRIO**, Chocó, Col. timber, useful for making barrows, etc.
- LIS**, Mex. in making trials (*tentaduras*) in the *patio* process, the name given to the "flouring" of the quicksilver, or its subdivision into minute globules, *syn. desecho* (1), *see u. pasilla*.
- LISO**, SA, adj. *see u. comino*.
- LISO**, (1) the flat and extensive face of a rock, *comp. cara* (5) ; (2) slickenside, *see plano* (4) ; (3) Ant. Col. fault, *see falla* (1) ; (4) Ant. Col. slide, *see salto* (1).
- LISTA**, Mex. in the *patio* process, a tail of impure mercury (T. Egleston).
- LISTADO**, DA, adj. striped ; *cuarzos listados*, ribboned quartz, or quartz in thin layers (Fr. *rubané* or *rubanné*).
- LISTÓN**, lath, batten, *see barrote* (1), *lata* (2), *tablilla* ; *listones*, Ant. Col. pieces of timber smaller than a *cuadro* (4), being about 4 to 5 inches thick ; Marmato, Cauca, Col. timbers 12 feet long and 2 inches by 3 inches section.
- LISTONAR**, to batten, to lath.
- LITARGE**, **LITARGIRIO**, litharge, *syn. Peru*, *almartaga*, Mex. *greta* (2), *nata* (1), *see temescuitate* (2) ; 1. *nativo*, native litharge or lead ochre.
- LIXIVIACIÓN**, leaching, *see lejía*.
- LIXIVIADORA**, leaching-vat.
- LIZOTE**, Sinal. Mex. quartz (*cuarzo*) with blue specks, considered a good sign of silver, and very often rich.
- LLAMA**, (1) flame ; for *ulla llama*, *see u. ulla* ; (2) S. Am. wool-bearing quadruped of the camel family, comparatively small in size, and used as a beast of burden in Peru, etc., *see taquia*.
- LLAMADA**, (1) com. notice, entry ; (2) *hacer la ll.*, to call or signal, *see llamar*.

**LLAMAR**, to call, signal, *see* **llamada** (2) ; Mex. to signal for the cage or bucket (Dwight).

**LLAMPEROS**, Chuquicamato, Chile, a multitude of small fissures filled with copper ores (atacamite), traversing the rocks (granites, pegmatites and syenites) in every direction (C. G. Avalos), *comp.* **llampo** (1).

**LLAMPO**, (1) Chile, fine ore or coal-dust ; **llampos**, Chuquicamato, Chile, ground copper ore (low grade), *comp.* **llamperos** ; (2) **llampos**, Peru, *see u.* **pacos** (1).

**LLANA**, trowel (for spreading mortar), *see* **trulla**.

**LLANADA**, a plain, *see* **llano**.

**LLANO**, a plain or land more or less horizontal and with few elevations (Bárcena), *syn.* **llanada**, **llanura**, **planada**, **planicie** (1), *see* **altiplanicie**, **bolsón**, **campaña** (1), **canal** (15), **estepa**, **hoya** (5), **jalca**, **landa**, **médano** (3), **meseta** (2), **pampa** (1), **sabana** (1), *comp.* **páramo**.

**LLANTA** (or **yanta**), (1) tire (or tyre) of a wheel, wheel-tire, covering the rim [**anillo** (6)], *syn.* **banda** (3), **calce** (1), **cincho** (2), *see* **calzadora** (1), **camón** (3), **pina** (2), *comp.* **loriga** ; (2) piece of iron very wide in proportion to its thickness (Acad.).

**LLANURA**, top. a plain, *see* **llano**.

**LLAPA**, Peru, (1) an additional quantity of mercury added, *see* **llapar** ; a gratuity given to the buyer (Velázquez).

**LLAPANA**, Peru, avalanche of rocks, stones, gravel, clay, etc., produced by occasional heavy rains in **quebradas** which are usually dry, *syn.* **huayco**.

**LLAPAR**, Cerro de Pasco, Peru, in the **patio** process, to add more quick-silver to the pulp, *i.e.*, after the **incorporo**, *comp.* **baño** (1).

**LLAUCA**, Peru, taking down the vein, when softer than the wall, and subsequently extracting the latter—for this purpose rods from 7 to 10 feet long are used, *see* **cachorros**, **ensanchar** (1), *comp.* **circa** (2).

**LLAUCAR**, Peru, to perform the operation known as **llauca**.

**LLAVE** (Port. **chave**), (1) key ; **ll. maestra**, master-key ; **ll. de paso**, vent. self-acting key for closing doors ; (2) stop-cock, tap of barrels, water-pipes, etc. ; **ll. de alimentación**, feed-cock ; **ll. de escape**, st. eng. blow-off cock ; **ll. de humero**, damper, *see* **registro** (3) ; (3) mech. wrench ; **ll. inglesa** or **de tuerca**, monkey-wrench ; **ll. para tubos**, tube-wrench ; (4) **ll. de maniobra**, bor. tiller, *syn.* **manivela** (2), equiv. Fr. **manche de manœuvre**, **manivelle** ; (5) **ll. de retención**, or **de retén**, bor. nipping-fork or "tiger," equiv. Fr. **clef de retenue** ; (6) **ll. de suspensión**, or **grapa**, bor. lifting-dog, equiv. Fr. **pied-de-bœuf** ; (7) **ll. de seguridad**, hoist. safety-hook, safety-catch, self-detaching hook (*e.g.*, Walker's) to prevent overwinding, equiv. Fr. **crochet de sûreté**, **évite-molettes**, Ger. **Seilauflöser**, *comp.* **paracaídas** (1) ; (8) **ll. de sujeción** **Baumann**, hoist. Baumann's conical piece of metal for capping ropes ; (9) key-stone of an arch, *see* **clave** ; (10) portion of ground too poor to work, or arch of ground left as a support in mines,



or an artificial structure made for the same purpose, *syn.* **traba** (2), *see* **testera** (6), *comp.* **pilar** (3); **ll. corrida**, Linares, Sp. in underhand stoping, an arch of ground 2 m. thick left as support to upper and lower levels; (11) **llaves**, pump. the two timbers which support the **gualdra**; (12) Mex. timb. an entire shaft-frame made of round oak (Gamboa), *see* **cuadro** (1); (13) **llaves**, Guan. Mex. timb. in inclined shafts, the two end-pieces which support the **cabezal** (3) on the hanging and the **caneleja** (1) on the footwall (Carrión), *syn.* **bocas** (10), *see* **crucero** (3); (14) Zac. Mex. the transverse timber (Guan. **puntal**) in timbering levels, if on one or more leg-pieces = **cabezal** (2) (cap-piece), if mortised from above downwards = **llave**, properly speaking, if an inclination of more than  $45^\circ$  = **llave lanura** (Pachuca, **palo lancero**), if short = **boca** (4) (Carrión); (15) Mex. in timbering galleries of large section in soft ground (spilling), the first frame = **llave de apuntar**, the second = **llave de retén**, and the third = **llave de recibir** (Carrión); (16) b. constr. strut or key, beam or angle-tie; (17) try-square for truing angles.

**LLEIRA**, place full of pebbles or coarse gravel, *see* **guijarral**.

**LLENA**, alluvion (**aluvión**); overflow of rivers.

**LLENADORES** (fillers), (1) Alicante, Sp. in the **salinas**, workmen who pile up the salt in the **eras**; they are assisted by the **encuartadores**: the heaps (**montones**) are from 200 m. to 300 m. long, 40 m. wide, and from 10 m. to 12 m. high (Molina); (2) Minas Geraes, Braz. bucket-fillers, *see* **enganchador** (1).

**LLENAMIENTO**, filling (of veins, etc.), *see* **relleno** (4).

**LLEVADA**, carriage, transport, *see* **transporte**.

**LLEVADOR**, carrier, conductor.

**LLEVAR**, to carry, convey, transport, *see* **transportar**.

**LLICTERÍA**, Bol. franckeite  $[5\text{PbS} + 2\text{SnS}_3 + \text{Sb}_2\text{S}_3]$ , an ore invariably accompanied by **polvorilla** (silver sulphide). It is found in the district of Animas, a short distance south-east of Chocaya, and about 13,000 feet above sea-level (A. W. Stelzner), *see* **estaño** (2), **plata** (2).

**LLIMPE**, according to Humboldt, the name given to cinnabar (**cinabrio**) by the Mexican Indians; **llimpi**, Peru, ores of red colour, generally cinnabar (Dwight).

**LLINQUI**, Sandia, Peru, alluv. m. sterile zones, 15–20 cm. thick, composed of very argillaceous material, occurring in the large detritic deposits of glacial origin (L. Pflücker).

**LLOVEDIZO, ZA**, adj. **agua llovediza**, rain-water, *see u.* **agua** (1).

**LOBO**, *see* **garganta** (5).

**LOCO, CA**, adj. **poleas locas**, loose pullies.

**LODAR**, blast, to line wet holes with clay, *syn.* **enlodar**, *see* **enlodadura**; for **atacadera de l.**, *see u.* **atacadera**.

**LODO**, mud or slime, *syn.* **fango** (1), **lama** (2), **légamo**, **limo**, *see* **rabos**,

**LODONERO**, *see* **guayacán**.

**LODOSO**, SA, adj. muddy, slimy, *syn.* **limoso**, sa.

**LOMA**, (1) top. any rise of ground up to 100 m. or 150 m. (Bárcena); a hillock in a plain, sometimes gold-bearing, *comp.* **cerro** (1) **colina**, **playa** (1); (2) slope, *syn.* **falda** (1) *comp.* **pendiente** (1).

**LONA**, canvas; 1. **para encerados**, tarpaulin; *see* **encerado** (2).

**LONGANAS**, Guan. Mex. cylinders of clay containing rich ore, or long sausage-like pieces of ore which the miners stole by sticking them in the anus (Humboldt and Tilmann).

**LONGITUD**, (1) length (of a gallery, etc.); (2) geogr. longitude; (3) surv. departure (easting or westing), *comp.* **latitud** (4).

**LORIGA**, nave-band or hoop, surrounding hub or nave [**cubo** (3)] of a cart-wheel, *comp.* **llanta** (1).

**LORITOS**, Asturias, Sp. holes or vacant spaces left in the filling or stowing (Molina), *see* **relleno** (3).

**LOSA**, (1) flat stone, flag-stone, flag, *see* **cobija** (2), *comp.* **laja**; (2) Coquimbo, Chile, a mass of rock, about 20 feet thick, formed of fragments of recent shells, with a few whole ones, and with small pebbles firmly cemented together (C. Darwin), *see* **conglomerado**.

**LOSERO**, a quarry for **losa** (1); Guan. Mex. extensive quarries (**canteras**) of sandstone (**arenisca**), very consistent and of beautiful colours, used for building purposes (Ramirez); a grit near the base of the **bufas** [consisting of rhyolitic tuff], containing fragments of crystals of felspar, and resting on a coarser grit of a red colour (St. Clair Duport); Humboldt calls it felspathic conglomerate, and says it is composed of grains of quartz, small fragments of slate, and crystals of felspar in a ferruginous clay cement; it is divided up into very thin leaves (**hojas**); it is a recent argillaceous sandstone—the new dam of Guanajuato, capacity 6,000,000 gallons, is made of this rock, called **cantera**.

**LOZA**, (1) pottery; (2) Peru, alluv. m. bed-rock, *see* **roca** (6).

**LUCHADERO**, mech. neck or journal (portion of shaft which rests in the bearings), *syn.* **cuello** (2), **manga** (5) **del eje**, **peón** (2).

**LUMBRE**, **piedra de l.**, (1) flint, *see* **pedernal**; (2) firestone, *see* **tizar**.

**LUMBRERA** (skylight), (1) air- or adit-shaft; shaft for ventilating tunnels, etc., *see u.* **pozo** (2), *comp.* **sopladero**; (2) a rise, *see* **contracielo** (1); (3) Mex. port-hole in furnace (Dwight), *see* **horno** (2), **ojo** (14).

**LUZ**, (1) light; 1. **descubierta**, c.m. naked light; 1. **de arco**, el. arc light; 1. **incandescente**, el. incandescent light; (2) clearance of a piston; (3) port of a cylinder, etc. (Fr. **lumière**); (4) span of a bridge, *syn.* **ojo** (12), **tramo** (4); span of an arch (**arco**), *syn.* **apertura de bóveda**; (5) mech. prep. mesh, *see* **malla**; (6) section of a shaft, well, etc., “de una l. de 2 por 3 m.”

**LL.** Words with this letter will be found arranged alphabetically under **L**.

- MACANA**, (1) wooden weapon of war of the Indians, shaped like a scimitar—in 1554 the Indians of Buriticá, Col. worked gold veins by means of *macanas* and *coas* (V. Restrepo), the latter was a kind of hoe ; (2) Col. split wood, made from the trunks of palm-trees and tree-ferns, used for fencing and other purposes ; it is very hard and durable, the Indian blow-gun (*cerbatana*) is made of *macana* (Uribe).
- MACEO**, Mex. stamping and crushing as distinguished from pulverising (*pulverización*), *comp.* *granceo*.
- MACERO**, Mex. man in charge of stamping and crushing (*maceo*).
- MACETA**, (1) handle of some kinds of tools, *see* *astil* (1) ; (2) two-clawed hammer, *see* *martillo* ; (3) hammer with head of two equal faces and a short handle, used by stone-cutters for striking the chisels (Acad.).
- MACHACADO**, Peru, ore containing visible native silver or gold (Barba, 1640) *syn.* *metal m.*
- MACHACADORA**, mech. prep. rock-breaker or crusher, *see* *quebrantador*.
- MACHACAR**, to crush or break up ore ; to buck, spall or stamp ore, *syn.* *machar* (to spall), *machucar*, *majar*, *comp.* *chancar*, *moler*, (1), *pistar*.
- MACHADA**, *see* *machaqueo*.
- MACHADERO**, Ant. Col. mech. prep. spalling place or shed.
- MACHADO**, hatchet ; Port. *id.* ; m. *com duas bocas*, Minas Geraes, Braz. two-edged hatchet, *syn.* *bisarma*.
- MACHADOR**, Ant. Col. mech. prep. spaller, *see* *chancador*, *comp.* *majador*.
- MACHADORA**, mech. prep. stone-breaker, *see* *quebrantador*.
- MACHAQUEO**, mech. prep. spalling, *syn.* Ant. Col. *machada*, *machucadura*, *machucamiento*.
- MACHAR**, mech. prep. to spall, *see* *machacar*.
- MACHAYS**, Quito (Ecuador) and Peru, porphyritic caverns of little depth, lined with sulphur, and with enormous openings—the name is Indian (Humboldt), *see* *cueva* (2).
- MACHETE**, cutlass, chopping-knife, cane-knife, *comp.* *bolo* (1).
- MACHETERO**, one who clears away bushes with a *machete*.
- MACHIHEMBRAR**, to dovetail, or join with tenon or tongue and groove, *syn.* *ensamblar á cola de pato* or *de milano*.
- MACHINA**, (1) shears, for those used in bor. *see* *caballete* (7) ; (2) pile-driver, *see* *martinete* ; (3) *machinas*, Lináres-Carolina, Sp. very thick pine-timbers used underground (Molina), a kind of stull (*estemple*) ; (4) Peru, iron or bronze lamp (*lámpara*), using a mixture of colza oil and kerosene, etc. (Santolalla).
- MACHO**, **HA**, adj. *see u. macho* (4).
- MACHO**, (1) any male animal, particularly a he-mule, the offspring of a horse and ass, or of donkey and mare ; (2) hook to catch hold in an eye ; (3) screw-pin ; male screw ; tap (*see u. terraja*) ; (4) Ant. Col. an unproductive mineral vein, *syn.* *machorro*, *matacho* (Uribe) ; *cuarzo m.*, sterile quartz (*cuarzo estéril*) ; (5) Pachuca, Mex. timb. sole-piece, *see* *solera* (3) ; (6) Pachuca, Mex. timb. wall-plate, *see* *largueros* (2) ; (7) geol. dike (Chalon), *see* *dique* (5) ; (8) mas. buttress



or pillar, *syn.* **machón**, *see* **contrafuerte** (1); (9) sledge-hammer used by smiths, *see* **martillo**; (10) block on which a smith's anvil (**yunque**) is fixed, *see* **cepo** (5); (11) square anvil, *see* **yunque**.

**MACHÓN**, *see* **macho** (8).

**MACHONGA**, Col. iron pyrites, hard and shining, of the colour of bronze or gold (Uribe), *see* **marmaja** (4).

**MACHORRO**, *see* **macho** (4).

**MACHOTE**, Mex. mark (usually a stake driven in a hole), used in mines to measure the contracts (**destajos**), *syn.* **señal** (2), *see* **blanco** (1); mark distinguishing various piles [**montones** (1)] of ore, *see* **partido** (2).

**MUCHUCADOR**, Mex. crusher (Dwight), *see* **quebrantador**.

**MACHUCADURA**, **MACHUCAMIENTO**, spalling or crushing, *see* **machaqueo**.

**MACHUCAR**, *see* **machacar**.

**MACIÑO**, a var. of sandstone (**arenisca**), analogous to **molasa**, but containing less quartz and more felspar (Bárcena).

**MACIZO**, **ZA**, adj. compact, solid, hard (in a miner's sense), *see u.* **panino**; for **piedra maciza**, *see u.* **piedra**; met. solid, well melted.

**MACIZO** (massiveness, bulk), (1) the solid untouched part of a vein-virgin ground, *see* **sano**, *comp.* **bordo** (1); (2) block of ground ready for stoping; block of ground between levels [**pisos** (1)] and shafts, *see* Fig. 53, *syn.* **borde** (3), **bordo** (3), Col. **cortes** (8), **cuadro** (3); (3) pillar of ground, *syn.* **pilar** (3); **m. de protección**, safety block or pillar; (4) **m. mineralizado**, ore-body, *see* **clavo** (2); (5) **macizos**, c.m. longwall system (Chalon), *see u.* **tajo** (4); (6) *see u.* **caliche** (1).

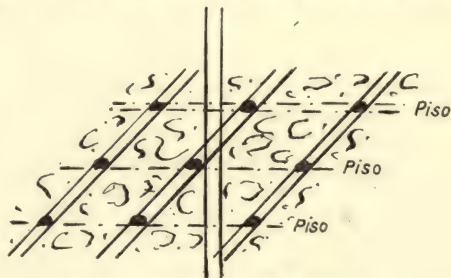


FIG. 53.—Macizos (2) (after Molina).

**MACOS**, Cartagena, Sp. residues from ancient washings (Molina), *comp.* **desecho** (2).

**MADERA**, wood, timber, lumber, *see* **adema** (1), **guarnición** (1), **leño** (1), **maderaje**, **madero**, *u.* **madrina**, **morillo** (3), **palo** (2), **rollizos**; **m. de hilo**, timber worked on all four faces; **m. de sierra**, sawn timber; **m. en rollo**, timber with the bark still on; **m. enteriza**, the largest squared beam that can be taken from the trunk of a tree, for other kinds consult Acad.; for proper time of cutting in tropical countries, *see* **menguante**; for different kinds used in timbering or for other mining purposes (marked \*), in construction, etc., *see* **aceite** (5), **álamo**, \* **alcarata**, **amamor**, **anime**, **arrayán**, \* **balata**, \* **cagüi**, \* **candeia**, \* **caoba**, **capuri**, \* **caracolí** (1), **caramacate**, \* **caraniomacho**, \* **castaño**, \* **caunce**

(charcoal), *comino*,\* *copaiba* (1), *cupano*, *diablo* (4) *fuerte*,\* *dinde*,\* *diomate*,\* *ebo* (charcoal), *encina*\*, *flor* (4) *amarillo*, *fresno*,\* *guayacán*,\* *haya*,\* *ispabe*, *lanche*\*, *laurel* (1), *lirio*, *majagua* (1), *mangle*, *mapurri*, *maquimaquí*, *mezquite*, *mora*, *muzo*, *nipa*, *nispera*, *níspero*, *ocote*,\* *oyamel*\*, *palo* (3)\*, *u. pao*, *pinabete*,\* *roble*,\* *rodeno* (2), *tejo* (1), *tepeguaje*, *trapichero* (2), *vera*, *zahino*\*, *zapatero* (1)\*.

**MADERADA**, raft or float of large timbers for conveyance down rivers, etc., *syn.* *armadía*, *maderero* (3), *comp.* *balsa* (2).

**MADERAJE**, **MADERAMEN**, timber (*madera*) necessary for a building ; a house in frame (Velázquez) ; carp. carpentry work (Ponce de León).

**MADERERÍA**, wood-yard, timber-yard, lumber-yard.

**MADERERO**, (1) timber-merchant, lumber-dealer ; (2) carpenter, *see* *carpintero* ; (3) man in charge of rafts or floats of timber, *see* *maderada*.

**MADERO**, (1) long piece of timber whether squared or round ; *m. barcal*, round timber, 12 or more inches in diameter (Acad.) ; (2) *b. constr.* squared timber, beam, *see* *viga* ; *m. cachizo*, large sawn timber ; *m. de á diez*, *de á ocho*, *de á seis*, squared timber  $\frac{1}{10}$ ,  $\frac{1}{8}$ , and  $\frac{1}{6}$  of a *vara* deep (*see* Acad. for other dimensions) ; *media m.*, squared timber 10 feet long, 10 *dedos* wide, and 8 *dedos* deep (Acad.).

**MADRE**, (1) bed of a river, *see* *álveo* (1) ; (2) mother (of liquors) ; *m. del sal*, near El Carmen, in the Rio Negro, = sulphate of soda crystallised out, crystals of selenite being called *padre del sal* (C. Darwin), *see* *agua* (6), *albina* (3) ; (3) Mex. timb. bearer or bearing-stemple, *syn.* *m. de tirante*, *see* *traviesa* (4) ; (4) *m. del oro*, Ant. Col. alluv. *m. hematite*, or pebbles of ironstone (Uribe) ; (5) *madres*, Ant. Col. stones met with re-united with the gold on concluding the washing (Uribe) ; (6) *madres*, Ant. Col. smooth surface rocks, sometimes spherical, sometimes flat (Uribe), *see* *roca* (1) ; (7) Braz. *see* *veia* (2).

**MADRINA**, prop, stanchion ; Ant. Col. (*madrino*), thick and resisting timber (*madera*) on which dams (*tupias*) are made in rivers, etc. (Uribe).

**MADRONA**, Mex. certain plant used for firewood (*leña*).

**MAESTRA**, (1) mas. lath-rule, generally used vertically, as a guide in constructing walls, etc. ; (2) *maestras*, timb. wall-plates, *see* *largueros* (2).

**MAESTRAER**, to level the surface of a wall with a *maestra* (1), *see* *nivelar* (2).

**MAESTRO, RA**, adj. main or principal, *e.g.*, *galería* (1) *maestra*, main gallery, *pozo* (2) *maestro*, main shaft.

**MAESTRO**, (1) master, master-workman, boss ; *m. albañil*, master-mason ; *m. carpintero*, master-carpenter ; *m. del bocarte*, mill-man ; *m. de obras*, contractor or builder ; superintendent of construction ; *m. fundidor*, practical smelter ; *m. herrero*, master-blacksmith ; *m. mecánico*, master-mechanic ; *m. palero*, head timberman, *see* *oficial* (2) ; (2) Peru, the principal trough in *patio* amalgamation, in which all the amalgam is gathered (Dwight), *comp.* *gamella* (2).

**MAGISTRAL**, met. flux. (*fundente*) or reagent (*reactivo*) for preparing, hastening or effecting the smelting or treatment of ores (*Acad.*) ; Mex. in the *patio* process, ore of sulphide of copper and iron which is roasted and pulverised, and mixed with the *lama* (2) to decompose the ores of silver (G. F. Lyon) ; copper pyrites or roasted copper pyrites—if pure sulphate of copper is used, the proportion is 5 to 8 lb. per *montón* (2) of 30 *quintales* (S. Ramirez) ; mines of *magistral* occur at Asientos, Aguascalientes, and elsewhere ; *see piquete* (4).

**MAGISTRALEROS**, Mex. men who burn the copper ore or *magistral*.

**MAGRO**, RA, adj. lean ; for *ulla magra*, *see u. ulla*.

**MAGUEY**, *Agave mexicano*, *see agave*, *u. ixtle* (2)

**MAIMONA**, cross-beam of a *tahona* ; Mex. piece fixed to the cross-beam (*gualdra*) of the *arrastre* (3), and which has a circular aperture for the introduction of a cylindrical tenon [*espiga* (1)] fastened to the top of the *peón* (2) or vertical post (Ramirez).

**MAIZ**, maize or Indian corn, the principal food used on the Mexican, Central and S. American mines.

**MAJA**, **MAJADERO**, pestle of a mortar [*mortero* (2)], *syn. majador* (2), *mano* (2), *maza* (6), Mex. *pilón* (6), *pistadero*, Mex. *tejolote*, equiv. Port. *mão*, Fr. *pilon*, Ger. *Mörserkeule*.

**MAJADOR**, (1) pounder or bruiser of ores, *comp. machador* ; (2) pestle, *see maja*.

**MAJAGUA**, (1) Cuba and S. Am. a tree (*Hibiscus tiliaceus*), from the bark of which the strongest and most durable cordage is made (*Velázquez*) ; (2) *prehnite*, often called *jade* (*jade*).

**MAJANO**, small heap of stones sometimes used as a landmark, *see mojón* (1).

**MAJAR**, to pound or beat in a mortar ; to pound ores, *see machacar*.

**MALA**, Peru, top. gorge, *see cañón* (5).

**MALACATE**, Mex. (1) mule- or horse-whim for hoisting ore, waste rock [*tepetate* (1)], or water, *syn. m. de caballerías*, *m. de sangre*, Chile, *piquetorno*, equiv. Fr. *baritel à chevaux*, *manège*, Ger. *Pferdegöpel* ; for parts of a *malacate*, *see árbol* (3), *bolea*, *dado* (2), *espeque* (1), *u. horqueta*, *piso* (5), *u. poste*, *punte* (3), *salerillo*, *linternilla*, *u. viga*, *comp. mequinas* (2) ; *m. de rosario*, Sierra de Gador, Sp., one working endless rope to which *esportones* are tied ; *m. doble*, one having bags (*botas*) of two ox-hides, holding 1250 lb. of water ; *m. sencillo*, one having *botas* of one ox-hide, holding 625 lb. of water (M. J. Gloss.) ; a *malacate* with two *palancas* requires twenty-four horses per day, each working two to two and a half hours in the twenty-four, one man in charge [*cajonero* (3)], two drivers (*arreadores*), and six *peons* or *contras* (2), the last receive the *manta* (1) at the mouth of the shaft, carry ore to the *patios*, and waste to the dump. With a *malacate* working to a depth of 300 m., 190 tons can be extracted in twenty-four hours, eight horses being necessary ; (2) any hoisting-machine, whether driven by steam, water, etc. ; *m. de araña*, Pachuca, Hid. Mex. ordinary capstan (*cabrestante*).



**MALACATERO**, whim-driver.

**MALAQUITA**, (1) malachite, *syn.* m. verde, cobre verde ; (2) m. azul, azurite, *syn.* corbre azul.

**MALECÓN**, (1) dike, embankment, *see* presa (1) ; (2) levee, jetty ; ore-wharf (Chalon), *see* muelle (3) ; (3) coffer-dam, *see* represa (1) ; (4) rail. stage, bank (Ponce de León), *see* terraplén (1).

**MALGAMA**, *see* amalgama.

**MALLA**, mech. prep. mesh of sieves, *see* luz (5), ojo (13) ; vent. mesh of the screen of a safety-lamp.

**MALLO**, mallet, *see* mazo (1).

**MAL-PAIS**, N. Mex. ground covered with lava (J. Marcou).

**MALTA**, asphalt, mineral pitch, *see* asfalto.

**MAMA**, Col. alluv. m. mallet [*mazo* (1)] for driving in stakes (*estacones*), *see u.* trincho (2).

**MAMBLA**, isolated rounded hillock, *see* cerro (1).

**MAMPARA** (door-screen), shield (Ponce de León), *see* escudo (1).

**MAMPOSTEADO**, mas. pointing (Ponce de León).

**MAMPOSTEAR**, to build with rubble and mortar ; to cement with mortar.

**MAMPOSTERÍA**, (1) rubble-work masonry or rough stone-work, *syn.*

Mex. *cal y canto*, *enripiado*, *see* lastre (1), mampuesto (1) ; (2) masonry or walling in general, equiv. Port. *alvenaria*, *cantaria*, Fr. *maçonnerie*, Ger. *Mauerwerk* ; masonry or walling in mines, equiv. Fr. *muraillement*, Ger. *Mauerung* ; m. *colgada*, masonry held in place by iron rods suspended from masonry, or from beams at the mouth of the shaft ; m. *concertada*, masonry made of stones roughly dressed ; m. *por hundimiento*, method of walling shafts in watery or incoherent strata, *see u.* *cantería* (3), *cono* (1), *corona* (2) ; m. *seca*, m. *en seco* or *pedriza* (3), walling without mortar, dry-walling, *see* *dema* (3) ; m. *trabada* or m. *ordinaria*, masonry set with mortar ; *see* *albañilería*, *arco*, *mazonería*, *mocheta*, (1), *muro* (1), *obra* (3), *pircas*, *u.* *revestimiento* (1), *tabaire*.

**MAMPOSTERO**, mason, stone-mason, *see* *albañil*.

**MAMPUESTA**, (1) row or course of bricks or stones, *see* *camada* (2) ; (2) stack of stones for rough work (Ponce de León).

**MAMPUESTO**, (1) ashlar, rubble, rubble-stone, rough stone or material used in walling or rough stone-work, *syn.* *cascote*, *morillo* (1), *ripios* (1), *see* *cabezote*, *comp.* *carretal*, *sillar* ; (2) stone or brick, placed over others (overlapping) in masonry work ; (3) Ant. Col. a trestle aqueduct for flumes, *see* *cabezal* (5), *presa* (2), *talabardón* (1).

**MANANTIAL**, source, spring, *syn.* *fuentes*, m. *de agua*, *mina* (5), mineral (3), *nacimiento*, *ojo* (2) *de agua*, *venero* (1), *veta* (4), equiv. Port. *manancial*, *nascente*, Fr. *source d'eau*, Ger. *Quelle*, *see* *agua* (1), *aguada* (2), *amagamiento*, *azanca*, *burga*, *chorro* (2), *chortal*, *hervidero* (1), *hontanar*, *vena* (4), *vertedero* (3), *vertiente* (2), *comp.* *puquio* (1) ; m. *caliente* or *ojo termal*, hot spring.

**MANAR**, to issue (of a spring), *see u.* *brotar*.

**MANCHA**, stain or spot of ore, *syn.* m. or peca de metal ; tierra de manchas, *see u.* greda (1) ; flaw in a crystal, etc.

**MANCHADO, DA**, adj. spotted (of ore, etc.).

**MANCHÓN**, m. de turba (1), turbary, *see* turbera.

**MANDADERO**, Mex. daily messenger (Lyon) ; errand-boy.

**MANDÍBULA**, any metallic jaw used for holding a rope or chain from which a weight is suspended, *syn.* agarradera ; mandíbulas, mech. prep. jaws of a stone-breaker, etc., *comp.* lengua (2) ; polea de mandíbulas, hoist. clip-pulley (*e.g.*, Fowler's).

**MANDÓN**, Mex. master-miner, overseer or foreman [capataz (3)], working under the minero (3) and sotomineros, thus, in the Valenciana mine, Guan. in the time of Humboldt, the administrador had under him one minero, three sotomineros and nine mandones, these officials were carried into the mine on a sort of saddle [caballito (2)].

**MANERO**, Mex. single-handed miner's hammer (Dwight), *see* martillo, *comp.* maza (3).

**MANGA**, (1) Mex. the capote de monte of the Spaniards, the poncho of S. Am. and the ruana of Col., *comp.* serape ; (2) Mex. in the patio process, a conical bag, the upper part of strong well-sewn leather, and the lower or pointed end of thick closely woven canvas for draining amalgam, or for separating the quicksilver from the pella ; (3) a level or gallery (galería) divided for ventilation ; (4) canvas sail ("wind-sail"), sometimes used for ventilating shallow shafts ; (5) axle arm or spindle of wagons, etc. ; m. del eje, mech. journal, *see* luchadero ; (6) m. de viento, whirlwind, *syn.* torbellino ; m. de agua, waterspout, *see* bomba (4) ; (7) Somorrostro, Sp. inclined shoot, *see* vertedera ; (8) hose, *syn.* manguera ; vent. wooden tube, *see* caja (20), *u.* tubo ; m. de cuero, hydr. m. leather tube ; met. tuyere-sack (Dwight) ; (9) mech. sleeve, *see* brida (4), *u.* taco (1) ; (10) Ant. Col. meadow, pasture-land, corral ; (11) horno de m., *see u.* horno (2).

**MANGANA**, lasso (Acad.), *see* lazo (2).

**MANGANESA**, peroxide of manganese, *see u.* manganeso (2).

**MANGANESO**, (1) manganese ; (2) manganese ore ; m. negro, black manganese or pyrolusite, *syn.* manganesa negra ; m. gris, manganite ; *see* alabandina (2), alajita, canturrón.

**MANGAR**, Ant. Col. alluv. m. to scrape the ground-sluice [canalón (2)] with a hoe from above downwards, in order to collect the gold at a certain point (Uribe).

**MANGLE**, mangrove-tree ; m. colorado, Panamá, red mangrove (E. G. Williams).

**MANGO**, (1) handle or helve of a pick, etc., *see* astil (1) ; (2) Mex. mech. prep. lifter or stem of stamps, *syn.* Ant. Col. cabo (1), cola (4), Mex. mazo (2), equiv. Fr. flèche, *see* pilón (4) ; (3) Indian mango-tree.

**MANGUERA**, hose, *see* manga (8).

- MANGUETA**, (1) mech. lever, *see palanca* (1); (2) mech. sleeve, *see brida* (4).
- MANGUILLA**, mech. small sleeve, *see brida* (4).
- MANGUITO**, (1) mech. small sleeve, *see brida* (4); (2) mech. clutch, shaft coupling; *m. cónico*, cone-clutch; *m. de fricción*, friction-clutch.
- MANÍ**, Ant. Col. (1) alluv. m. large fragments of amphibolite, syenite or granite (Uribe); *see u. cueva* (3); (2) vein. m. "granite" or granitic "country," generally hornblendic—some porphyries are so called.
- MANIFIESTO**, com. freight-list, manifest.
- MANIGERO**, foreman or boss of a gang (Velázquez), *see capataz* (3).
- MANIGUA**, Cuba, thicket, jungle (Velázquez), *see monte* (2).
- MANIGUETA**, mech. handle or crank, *see cigüeña* (1).
- MANIJA**, handle or helve, *see astil* (1).
- MANILA**, *see abacá* (2).
- MANIOBRA**, work with the hand, *see u. llave* (4).
- MANIOBRAR**, to work with the hands.
- MANIVELA** (from Fr. *manivelle*), (1) handle of a winch, crank, *see cigüeña* (1); (2) bor. tiller (Fr. *manivelle*), *see llave* (4).
- MANIZAL**, Ant. Col. a place where *maní* abounds.
- MANO**, (1) hand, span; *m. de obra*, hand labour; (2) pestle, *see maja*; (3) Mex. and S. Am. grinding-stone of an *arrastre* (3), *syn. piedra de m.*; *m. de hierro*, muller of an amalgamating pan, *see voladora* (3); (4) Mex. stamp-head, *see calzadora* (2); (5) *manos*, hoist. sliding-pieces of a cage, *see abrazadera* (2); (6) cover or coat, *e.g., m. de alquitrán, brea, cal*; (7) quire of paper; (8) *á. m. limpia*, carrying blocks of ore, etc., in the arms (Molina).
- MANÓMETRO**, manometer, an instrument for measuring the elastic forces of gases or steam; vent. gauge for ascertaining the depression of air-currents; *m. de agua*, water-gauge, or ordinary U-tube—if tubes of different lengths = *m. diferencial*; *see graduador*.
- MANTA**, (1) woollen blanket; Mex. blanket [*see jorongo* (2)] or horse-cloth used for hoisting ores by the *malacates* (1), now replaced by sacks made of *pita* (2), *mecate*, *jarcia* (cordage) or leather; a *manta* of one hide costs \$6.50 to \$7.00 (silver), lasts from three to four weeks, and will hold from 20 to 30 *arrobas* of ore or waste, *see despachadores* (1), *ensamblado, saco* (1); (2) a bedded vein or deposit, a blanket deposit, *see manto* (3); (3) *veta de m. or de sombra*, Col. a vein which approximates to the horizontal, or which is more or less parallel to the surface of the ground, whose sinuosities it follows, *see asombrarse*; practical miners call veins dipping from 15° to 40° *vetas de manta*, if nearly or quite horizontal = *vetas de sombra*; on the other hand, according to Gamba, when the dip varies between 20° and 60° = *veta de sombra*, when it is less than 20° = *veta de manta* (or *manto*), corresponding to the "flat lodes" of the English; (4) Nicar. a surface deposit of broken quartz, worked for gold (Lock), *see oro*.
- MANTEADO**, DA, adj. flat, like a blanket, *see u. veta* (1).



**MANTEAR**, Mex. to hoist ore in bags or mantas (1).

**MANTECA**, lard, fat.

**MANTEO**, Mex. (1) hoisting, *see* **extracción** (1); (2) dip of a deposit, *see* **echado**.

**MANTERO**, Mex. one who, with scraper [**azadón** (2)] and baskets, fills the mantas (1), ties them up and hooks them on to the rope—four men perform the operation very quickly, *comp.* **enganchador** (1).

**MANTILLA**, Texas, U.S.A. pocket or bunch of ore, *see* **bolsa** (1).

**MANTO** (cloak or mantle), (1) bed, layer or circumscribed stratum, *see* **capa** (1); **mantos broceadores**, Atacama, Chile, sterile beds, *see u.* **mesa** (8); **mantos pintadores**, Atacama, Chile, beds which are themselves metalliferous, or in which the silver veins are enriched, may be calcareous marls or sheets of diabase which enrich the veins in a horizontal sense (E. B. Dorsey), *see* **chorro** (3); **mantos de azules**, Cartagena, Sp. beds containing **azules** (4); (2) a stratified mineral deposit; (3) a bedded or blanket vein, lenticular deposit or pocket, *syn.* **manta** (2); Aguascalientes, Mex. “*numerosos clavos ó boleos de minerales de oxido de cobre afectando la forma de platos ó la de lentes, conocidos localmente con el nombre de mantos, estan incrustados en la capa de caliza, en la ladera sur de los cerros de San Inan, San Miguel, y la Leja*” (Ramirez), *see* **hígado** (2), **lenteja**; (4) a vein, generally flat (**veta plana**), *see u.* **manta** (3); (5) Atacama, Chile, a great crush-zone, 6 to 13 feet thick (G. Berg); **m. bordos**, the vein-stuff of the Elisa mine, it is a perfectly soft, greasy rock, extremely like talc-schist, never more than 10 feet thick; **m. negro**, amygdaloidal augite-porphyrite, at most 7 feet thick, forming the footwall of the Elisa mine at a depth of 1620 feet on the dip (O. Nordenskjöld); (6) Copiapó, Chile, capel, rich in silica and alumina, leached out of rocks (A. Endter).

**MANUBRIO**, (1) handle of an instrument or tool, *see* **astil** (1); (2) winch handle or crank, *see* **cigüeña** (1); **manubrio-volante**, wheel-handle; (3) crank of a steam-engine, etc., *syn.* **biela** (2), **cigüeña** (3), **cigüenal** (2), *see* **botón** (1), **codo** (4), **ojo** (7).

**MÃO**, *see* **maja**.

**MAPA**, map, *see* **carta** (3), **plan** (5).

**MÁPULA**, a precious stone mined near Popayán in Colombia (Velázquez).

**MAPURRÍ**, Darien, Col. timber formerly used by Spaniards, now scarce (E. R. Woakes), *comp.* **ispabé**.

**MAQUILA** (toll-corn), (1) Mex. rate paid to the proprietor of a mine, mill or reduction-works for mining, milling or reducing ore—applied chiefly to reduction by amalgamation, but is similar to custom-milling, *see u.* **hacienda** (4); (2) Mex. in the **patio** process, fixed cost of treatment (paid by the miners) as distinguished from the variable cost depending on the quantity of mercury consumed (St. Clair Duport)—it includes all cost of “beneficiating” with the exception of that of the lost mercury, any excess of salt used above  $2\frac{1}{2}$  per cent., and of

the expenses of any **repasos** exceeding fourteen in number (Dr. Percy);  
 (3) Mex. in selling ores, the cost of treatment and profit for the smelters;  
 (4) half a **celernín**.

**MAQUILADORO, RA**, adj. *see u. hacienda* (3).

**MAQUILAR**, Mex. to work ore for its owner on shares, or for a money payment (Chism).

**MAQUILERO**, (1) Mex. one who dresses ore on hire (M. J. Gloss.);  
 (2) Peru, ore-buyer (Dwight), *see rescatador* (1).

**MAQUÍMAQUÍ**, Ant. Col. a timber used for making axle-trees, beams, etc., the wood and bark are extremely bitter; it is said to be identical with **quassia**.

**MÁQUINA**, machine or engine, *syn. ingénio* (1), *see u. bomba* (1), *comp. motor*; **m. de barrenar**, rock-drill, *see perforadora*; **m. de campana**, Hartz mine-pump (Ger. **harzer Wettersatz**), *see u. ventilador*; **m. de desagüe**, pumping-engine; **m. de extracción**, hoisting-engine; **m. de tracción**, de tiro or de arrastre, traction-engine; **m. de vapor**, steam-engine; **m. exploradora**, diamond-drill machine; **m. soplante de pistón**, a blower adapted to ventilation.

**MAQUINARIA**, (1) mechanics, *syn. mécanica*; (2) machinery.

**MAQUINISTA**, (1) engine-man, engine-tender; (2) mechanic, *see mecánico*.

**MAQUIPUROS**, Cerro de Pasco, Peru, a class of workmen who make only temporary visits to the mines when they are attracted by the **boyas** (**bonanzas**)—"most of them come from the distant provinces, and they return to their homes when the **boya** is at an end" (Tschudi).

**MARAY**, Arg. a kind of hand-arrastre consisting of two stones, the under one is 3 feet in diameter and slightly concave, the upper one is a large spherical boulder of syenitic granite, about 2 feet in diameter, having in its upper part two iron plugs fixed oppositely, to which is secured, by lashings of hide, a transverse pole of canelo wood, about 10 feet long. Two men, seated on the extremities of the lever, work it up and down alternately, so as to give to the stone a rolling motion, which is sufficient to crush and grind the material placed beneath (Miers), *comp. arrastre* (3), **bimbalete**.

**MARCA** (mark), (1) Mex. royal arms (formerly) stamped on the silver as a sign that the duties (**derechos**) had been paid to the reigning monarch (Gamboa); by the present Code, the Government mark stamped on bullion, etc., *see cuño, marchamo*; (2) surv. mark, *see blanco*; (3) province (**provincia**), or district (**distrito**).

**MARCASITA**, marcasite, *syn. argiritas, margajita*, Ant. Col. **marmaja**, **marquesita**, *see u. pirita*; for var. *see esperkisa, polvorilla* (3).

**MARCHAMO**, mark (**marca**) put on safety-lamps, etc., *see u. cierre* (2).

**MARCO**, (1) a weight of 8 **onzas** = 8.1184 ozs. avoird. or 7.3995 ozs. troy; 1 m. de plata contains 8 **onzas** or 64 **ochavas** or 128 **adarmes** or 384 **tomines** or 4608 **granos**, *see u. dineral*; 1 m. de oro contains 50 **castellanos** or 400 **tomines** or 4800 **granos**; Mexican assays were formerly

reported as **marcos** and **onzas** per **carga**, **quintal** or **montón** (2000 lb. Mexican), but the decimal system has been compulsory for some years ; (2) timb. frame or set for a level or shaft, *see* **cuadro** (2) ; in Mex. a **m. de tiro de arrastre** (inclined shaft frame) consists of two **llaves** (13) or **bocas** (10), one **cabezal** (3), one **caneleja** (1), and one **pasamano** (1) or board as a divider ; **ademe de m. y estacada** (2), open crib-timbering ; (3) **marcos**, Guan. Mex. continuous frames of timber in a shaft, *see* **anillo** (2) ; (4) carp. door-frame or window-frame, *syn.* **cerco** (2) **de puerta** or **ventana**, **chambrana** (2), **jambaje**, *see* **dintel**, **jamba** ; (5) determined measure, as to length, breadth and thickness, that large timbers (**maderos**) should have, according to their class (Acad.).

**MAREJADAS** (swells of the sea), geol. cross-bedded structure or current-bedding.

**MARGA**, (1) marl (geologically, a clay containing a large proportion of carbonate of lime, but any fertilising bed of clay or sand is often called marl), *syn.* **barro** (2), **buro** (2), **grada** (2), **tierra gredosa** (clay-marl), *see* **arga** (1), **tosca** (2) ; (2) Titiribí, Ant. Col. spathic iron, *see* **siderosa**.

**MARGAJAS**, *see* **marmaja** (2).

**MARGAJITA**, *see* **marcasita**.

**MARGEN**, bank of a river, *see* **ribera**.

**MARGOSO**, SA, adj. marly, loamy.

**MARGUERA**, marl-pit.

**MARIPOSA** (night-taper), (1) lamp (**lámpara**) with a naked light (Chalon) ; (2) pump. butterfly valve, *see* **u. válvula**.

**MARISMA**, lake formed by the overflow of the tide (Velázquez) ; salt lake or marsh (Ponce de León), *see* **ciénaga** (1) and (2), **laguna** (1), **saladar**.

**MARITATA**, *see* **noque** (2).

**MARJAL**, fen. marsh, *syn.* Murc. Sp. **armajal**, *see* **pantano** (1).

**MARMAJA**, (1) Mex. iron pyrites, *see* **pirita común** *u.* **pirita** ; (2) **marmajas**, Mex. in the **patio** process, the pyritic residue or schlich obtained in separating the argentiferous amalgam by washing [on the **planilla** (1)] consists chiefly of  $\text{FeS}_2$ , and contains from 0.08 to 0.25 per cent. of silver (Dr. Percy) ; sometimes spelt **margajas**, *comp.* **bites**, **cabezuela** (1), **eslique**, **gandinga**, **jagua** (3), **mole** (2), **plomillo** (1), **polvillos** (3), **recorte** (5) ; (3) Ant. Col. **marcasite**, *see* **marcasita** ; (4) **marmajas**, Ant. Col. pyrite, frequently rich in gold and silver, *syn.* **marmato**, *see* **machonga**.

**MARMATO**, *see* **marmaja** (4).

**MARMITA**, met. metal pot (**olla de metal**) or kettle into which molten lead, etc., is poured, *comp.* **reposadero** (2).

**MÁRMOL**, marble ; **m. brecha**, **breccia** marble ; **m. brocatel**, marble with spots and veins of various colours ; **m. estatuario** or **de estatuas**, statuary marble (*e.g.*, from Carrara, Italy) ; **m. lumaquela**, shell marble ; **m. mejicano**, *see* **tecali** ; **m. pintado**, spotted marble ; **m.**



- rayado, streaked marble; *m. serpentino*, serpentine marble; *see* *jaspe* (3), *puebla*.
- MÁRMOR**, obs. marble; Almaden, Sp. "black porphyry" or melaphyre, *see u. pórfido* (1).
- MAROMA**, a large hempen rope made with a hempen core [*alma* (1)], *see cuerda* (1).
- MARQUESITA**, *see marcasita*.
- MARQUETA** (crude cake of wax), (1) Mex. bar of lead bullion, *see lingote*; (2) Peru, retort silver (Dwight); (3) *marquetas*, Mex. bricks of amalgam, *see bollos* (1).
- MARRANA** (sow), axle of the wheel of a *noria* (1), *see eje* (2).
- MARRANETE**, *see corona* (2).
- MARRANILLO**, timb. a piece of timber, corresponding to the head-piece, placed at the foot [*culata* (3)] of a stemple (*estemple*), *see galápago* (2).
- MARRANO** (hog), (1) timber connecting the *aspas* (3) of a water-wheel; (2) each of the timbers forming the frame [*cadena* (3)] supporting the lining of a well; (3) rafter or wood-work which supports a floor or cistern, *see u. viga*; (4) Tolima, Col. stone-breaker, *see quebrantador*.
- MARRO**, (1) And. and Murc. Sp. blast. ordinary sledge [*maza* (3)] for double-handed boring; *trabajo á m.*, double-handed boring, *comp. u. martillo*; (2) Mex. sledge-hammer weighing 20-25 lb. (Ramirez), *see martillo*.
- MARTILLO**, hammer, equiv. Port. *martello*, Fr. *marteau*, Ger. Hammer; for var. used in mining, quarrying, etc., *see almadana*, *aplanador* (2), *camartello*, *maceta* (2), *manero*, *marro* (2), *martinete* (1), *maza* (3), *mazo* (2), *vaivén* (2); for stone-cutters' hammers, *see escoda*, *maceta* (3); for smiths' hammers, *see aplanador* (1), *copador*, *destajador*, *macho* (9), *peña* (3), *porrilla*; for those used in mech. prep. *see almadeneta* (3), *despuntador* (1), *golpe* (2), *quebrador* (2); for parts of hammer, *see cara* (1), *ojo* (9); *trabajo á m.*, blast. single-handed boring, *comp. u. marro* (1); *de martillo*, wrought metal.
- MARTINETE**, (1) hammer (*martillo*) in copper-works (Velázquez); (2) eng. pile-driver, drop-hammer, *syn. machina* (2), *maza* (5) *de fraga*, *see pilón* (5), *pilote* (1).
- MAS**, Phil. a weight for gold or silver, equal to 3.768 g. = one-tenth of a tael (2).
- MASA**, (1) mortar, *see argamasa*; (2) mass of gold, silver or other metal; (3) irregular deposit or mass, *syn. cúmulo* (1), Mex. *promontorio* (3), equiv. Fr. *amas*; *m. echada*, irregular deposit more or less parallel to the stratification; *m. levantada*, irregular deposit, more or less vertical, and with major extension independent of the rock (Gillman), the latter appears to correspond to *m. derecha* of Peru; *see bolsa* (2), *bolsada* (3), *criadero* (2), *galerón*, *güedales*, *montón* (3), *rebosadero* (4); (4) *m. entrelazada*, stockwork deposit, *see cúmulo* (2); (5) *masas filonianas*, very wide portions of veins; (6) *m. del criadero*, substance

enclosed in the walls of a deposit, filling, *see* **relleno** (4); (7) any deposit, whether stratified or otherwise, regular or irregular, and, according to the degree of hardness, etc., divided into: (a) **masas flojas**, **sueatas** or **movedizas**, as sand, peat; (b) **masas blandas**, as clay, coal; (c) **masas quebradizas**, as certain argillaceous schists or slates limestones, sandstones with argillaceous cements; (p) **masas firmes** or **duras**, as sandstones, and, in general, rocks which contain much quartz; and (e) **masas muy firmes** or **muy duros**, as pure quartz, chert, porphyry, granite, gneiss, pyrites, etc., *comp.* classification *u.* **panino** (1); (8) Cerro de Pasco, Peru, mech. prep. pulp (O. F. Pfordte), *see* **harina** (2).

**MATA**, (1) met. matte; **m. azul**, "blue metal," *see* **hierro** (5); (2) *see u.* **matera**.

**MATACHO**, *see* **macho** (6).

**MATATENA**, Mex. small pebble, *see* **guijarro** (1).

**MATE**, adj. unpolished, **oro m.**, unpolished gold; tempered, slaked, **yeso m.**, *see u.* **yeso** (2).

**MATE**, *see* **totuma**.

**MATERA**, Ant. Col. bunchy mine, or one in which the gold is found in abundance in reduced spaces called **matas** (2) **de oro** or **topes** (6), the adjacent parts being barren (Muñoz), *syn.* **mina de tope** (6) or **de clavos** (2), *see* **bolsa** (1).

**MATERIA**, matter, material; **m. estéril**, deads, *see* **desecho** (3); alluv. m. overburden, *see* **montera** (3).

**MATERIAL**, material; **m. móvil**, transp. rolling-stock (Fr. **matériel** roulant).

**MATOS VIRGENS**, Braz. virgin forests, which include the **capões** or "island woods," *comp.* **capoeiras**, **carrascos**, **catingas**.

**MATRÍCULA**, (1) register, list; **libro de m.**, book of registration; (2) **matrículas**, Ant. Col. mech. snap (riveting-tool).

**MATRIZ**, (1) gangue, matrix, or veinstone, *syn.* Mex. **borra** (1), **broza** (6), Chile, **criadero** (7), **estéril** (1), **filón** (5), **ganga**, **guija** (3), **panino** (2), **pedra de veta**, **quijo**, **roca** (5) **madre**, **soroque**, **tepetate** (4), **tierra** (6), **zafra** (1), equiv. Port. **ganga**, Fr. **gangue**, **roches de filons**, Ger. **Bergart**, **Gangart**, **Ganggestein**, for var. *see* **almendrilla** (2), **azucar**, *u.* **cachí** (2), **diamantino**, **panizo** (1); (2) nut or female screw, *see* **tuerca**; (3) mould, *see* **molde** (2).

**MATURRANGO**, *see* **gachupín**.

**MATUTINAS**, morning veins (after Germans), *comp.* **septentrionales**, **vespertinas**.

**MAYORAL**, Peru, head overseer or boss, *comp.* **mayordomo** (2).

**MAYORDOMO**, (1) Mex. in the **patio** process, the chief of the **arrieros** or muleteers (Lyon), *see u.* **puntas**, *comp.* **capataz** (3); (2) Peru, foreman or boss, *see* **capataz** (3), *comp.* **mayoral**.

**MAYORÍA**, majority; **en mayoría**, in majority (as of shareholders in a mine).

**MAZA**, (1) stamp-head for pounding ores, *see calzadura* (2); (2) m. del martinete (2), monkey of a pile-driver, *see pilón* (5); (3) blast. sledge, maul or (Cornw.) mallet, *syn.* Peru, *combo*, Mex. *golpe* (1), And. and Mure. Sp. *marro* (1), Mex. *pico* (3), *porra*, equiv. Port. *martello grande*, Fr. *massette*, Ger. *Fäustel*, *see martillo*; for single-handed hammer, *see manero*, *comp.* *marro* (2); for sledge used in mech. prep. *see quebrador* (2); for ditto used by smiths, *see macho* (9); (4) barrel of a windlass, *see árbol* (2); (5) m. de fraga, *see martinete* (2); (6) pestle, *see maja*.

**MAZACOTE**, (1) *see barrilla* (1); (2) concrete, *see hormigón*.

**MAZAMORRA**, Col. (1) alluv. m. imperfect and accidental working; (2) insignificant part of the ground-slucice [*canalón* (2)] abandoned to poor people, who get what gold they can out of it (Uribe). NOTE.—In most parts of Colombia *mazamorra* is maize ground down in a *pilón* (7), and afterwards washed or boiled with a little wood-ashes—it is taken with milk.

**MAZAMORREAR**, Col. to wash gold, *see barequear*, *mazamorrero*.

**MAZAMORREO**, *see barequeo*.

**MAZAMORRERO**, Col. a gold-washer, who works on his own account, *see lavador* (1); in the Chocó, numbers of *mazamorreros* occupy every river, stream, etc., each one paying \$4 annually for the right to wash gold (1821); a very considerable part of the gold of Antioquia is extracted by *mazamorreros* (V. Restrepo).

**MAZAROTA**, mass of metal left as a residue in the upper part of a vertical mould (Acad.).

**MAZO**, (1) mallet or wooden hammer, *syn.* m. de madera, *mallo*, Col. *mama*, equiv. Port. *maço*, *macete*, *malho*, Fr. *maillet*, Ger. *Schlägel*, *see martillo*; (2) Mex. stem, shank or lifter of a stamp (Lyon), *see mango* (2); (3) stamp-head, *see calzadura* (2).

**MAZONERÍA**, (1) masonry, *syn.* *albañilería*, *see mampostería* (2); (2) brickwork, *syn.* *enladrillado*.

**MECÁNICA**, mechanics, *syn.* *maquinaria* (1).

**MECÁNICO**, mechanic, *syn.* *maquinista* (2).

**MECAPAL**, Mex. (1) broad band of raw hide, used by *tenateros* for carrying loads on the shoulders: it rests on the forehead, *see vestido*; (2) mech. prep. sheet-iron scraper used by ore-sorters, *comp.* *azadón* (3).

**MECATE**, Mex. (1) thread, coarse twine, cord or rope made of the fibre of the agave, *syn.* *pita* (2); (2) Sain Alto, Zac. measure of firewood (*leña*) 25 m. long, 1 m. high and 1 m. wide, or 25 cb.m., costing \$4 in 1895, *comp.* *cuerda* (5).

**MECHA**, (1) blast. tallow wick (*torcida de sebo*) which the *cohetero* or *golpeador* makes of his trousers or shirt, generally to fire the cartridge (Gamboa); match or fuse, *see botafuego*, *canilla*, *cañutillo*, *cohetazo*, *cuerda* (6), *pajuela*, *sulfonete*; (2) blast. safety-fuse, *syn.* *cañuela*, Peru, *guía* (13), *mecha común*, *mecha de seguridad*, *seguro* (4), Col. *siete* (2), *zafre*; var. are m. de cinta, with covering of tarred cotton,



and *m. de goma*, with rubber covering; (3) Guan. Mex. a torch) (*antorcha*) made of six tallow candles wrapped round with suitable material and corded outside; (4) wick of candle, lamp-wick; (5) boring-bit, *see* *bisel* (2).

**MECHAZO**, blast. a miss fire; *dar mechazo*, to miss fire, *i.e.*, by the burning of the fuse without exploding the charge, *comp.* *bocazo*.

**MECHERO**, tube for the wick of a lamp (*lámpara*), wick-holder; socket of candle-holder (*candeleja*).

**MECHINALES**, (1) *mas.* square stones left projecting in a wall to be continued, *see* *dientes* (5); (2) *mas.* holes left in walls or sides of shaft for scaffolding, putlog holes; *timb.* cavities made in rock for bearers, or holes in walls for the same purpose, *syn.* *cajas* (12), *entradas* (5), *comp.* *huida* (1).

**MEDANO, MEDAÑO**, (1) sand-bank on the seashore, dune; (2) mound of sand covered by shallow water; (3) Chile, plain of loose sand, in some cases 20 kilometres long, *see* *llano*.

**MEDIA**, blast. a medium-sized drill, used after the *guías* (3), and before the *apuradoras* (1), *see* *barrena* (2).



FIG. 54.

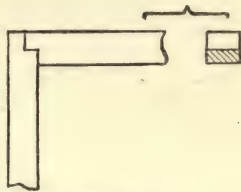


FIG. 55.

**MEDIACAÑA**, (1) *carp.* *Ajuste* (3) *de mediacaña*. *Ajuste* (3) *de mediamadera*, gouge; (2) half-round file,

*see* *lima* (2); (3) *ajuste* (3) *de m.*, *timb.* a joint for round timber only, made by notching the leg, *see* Fig. 54, *comp.* *asiento* (1).

**MEDIAMADERA**, joint for square timber, *see* Fig. 55, *comp. u.* *ajuste* (3).

**MEDIDA**, measure; measurement; *syn. obs.* *mesura*; standard gauge.

**MEDIO, IA**, adj. half; *media aspa*, *timb.* lath, *see* *pilote* (2); *media*

*barreta*, Peru, a gallery or slope at an angle of 45°, *see* Fig. 56 and *barreta* (4); *media luna*, Belmez, Sp. the circular gallery which surrounds the shaft (Molina), *see u.* *transporte*; *media pepena*, Mex. medium rich ore; *media portada*, *timb.* one leg and cap-piece only, *syn.* *medio marco*, equiv. Fr. *cadre d'un seul montant*, *demi-cadre*, *boisage á mi-porte*, Ger. *halbes Geviere*; *medio cocido*, *see u.* *cuero*; *medio marco*, *see* *medio portada*; *medio punto*, un arco de medio punto, semicircular arch, *see* *punto* (5).

**MEDIOS**, *see u.* *rabos*.

**MEDIR**, (1) to measure; (2) *m. una mina*, to survey a mine, *see* *apear* (2), *levantar* (1).

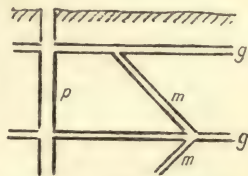


FIG. 56.—Media barreta.

*g g*, galerías; *m m*, media barretas; *p*, pozo (main shaft).

**MEJORA, MEJORAMIENTO**, improvement ; **m. de boca** (2), improvement or alteration made in the entrance to a mine (M. J. Gloss.).

**MELLA**, notch or nick in edged tools.

**MELODREÑA**, *see u. muela* (4).

**MEMORIA**, (1) Mex. list of the **raya** (2) or pay-roll ; (2) Mex. weekly account of disbursements or mine expenses ; (3) *see u. libro*.

**MEMORIAL**, memorandum-book, *syn. libro de memoria*.

**MENA**, (1) vein of ore (Velez de Aragón), *see veta* (1) ; (2) ore ; “ mineral metalífero, principalmente el de hierro, tal como se extrae del criadero, y antes de limpiarse ” (Acad.) ; “ mineral útil ó aprovechable ” (Molina) ; **m. crudo** or **bruto**, raw ore ; **m. grueso**, ore in large lumps **m.recio**, massive ore, *see metal* (3).

**MENGUANTE**, (1) ebb-tide ; (2) decrease of the moon ; **m. de la luna**, last quarter of the moon ; in tropical countries, timber, palm for thatching, etc., are always cut during the last quarter of the moon—the best time for felling is considered in Col. to be five days *before* the new moon, and two or three days *after* the new moon. At El Callao, Venez. “ there is an infallible rule, viz., deciduous trees cut when the moon is decreasing (*menguante*), and non-deciduous when it is at the *creciente* or increasing ” (G. P. Ashmore and C. Seale).

**MÉNSULA** (arch. bracket), timb. a bar of wood or iron placed immediately below the cap-piece [**capa** (4)], and secured to the leg-pieces (Molina), *see abrazadera* (5).

**MENUCOS**, N. Patagonia, Arg. dangerous bogs, usually hidden by a luxuriant growth of herbage (J. v. Siemoradzki), *see pantano* (1).

**MENUDO, DA**, adj. small, **carbón menudo**, smalls or small coal, *syn. Peru, ñuzco* ; mineral **menudo**, mech. prep., smalls or small ore, *syn. metal granza, tierras, see vacisco*.

**MEQUINES**, (1) Almería, Sp. inclined gallery, the floor of which is not in steps, but covered with boards for the **espuertas** (Molina), *comp. trancada* (2) ; (2) Sierra Almagrera, Sp. winch worked by horse, by means of toothed wheels and levers, *see torna* (2), *comp. malacate* (1).

**MERGED**, reward (**premio**) or recompense given for work done, especially to the day-labourer (Acad.), premium ; grant.

**MERCURIO**, (1) mercury or quicksilver, *syn. azogue* ; (2) mercury ore ; **m. corneo** or **dulce**, calomel or horn quicksilver [HgCl] ; **m. hepático**, liver ore (var. of cinnabar) ; for ores and deposits, *see acerado* (2), **antimonioso**, **bermellón**, **cinabrio**, **granate** (2), **hebrudo**, **negro** (2), **riolita**, **tinaja** (3), **troja** ; for rocks associated with quicksilver deposits, *see almendrilla* (1), *u. panino* (1), **veta** (2) ; for metallurgical appliances and processes, *see aludel*, **bola** (4), **cántaro**, **cenicilla**, **ceniza** (2), **chinateado**, **pila** (4), **querna** (2), **quemador** (2), **vacisco**.

**MERCURBLENDA**, *see cinabrio*.

**MERGULHADOR**, Braz. alluv. m. diver, *see mergulho*, **buzo**.

**MERGULHAR**, Braz. to work alluvial sands by diving, *see mergulho*.

**MERGULHO**, Braz. method of diving for auriferous river-sands employed by poor miners, *see u. buzo*.

**MERIDIANO**, NA, adj. *linea meridiana*, meridional line ; surv. meridian, *syn. meridiano*.

**MERMA**, waste, leakage ; loss of quicksilver in amalgamation ; loss of metal in melting, smelting, retorting, etc.

**MERODEADOR** (marauder), Fr. Guiana, prospector (L. Levat), *see cateador*.

**MESA** (table), (1) mech. prep. generic name for table ; *m. cónica fija*, round-buddle, *see gandinguera* ; *m. cónica giratorio*, revolving round-buddle ; *m. de apartado* (1), sorting-table ; *m. de arroyo*, S. Sp. small kind of sleeping-table, *syn. cajón de arroyo*, *royo*, *comp. cernedor* (2) ; *m. de lavado*, frame nicking-buddle (Ponce de León) ; *m. de sacudimientos*, *m. movida*, or *de vaivén*, percussion- or bumping-table (Ger. *Stossherd*) ; *m. del molino*, Ant. Col. blanket-table ; *m. de tela sin fin*, endless-belt vanner (*e.g.*, Frue vanner) ; *m. durmiente*, sleeping-table [Braz. *bica* (2)] ; *m. giratorio*, revolving table (Ger. *Rotirendeherd*) ; *m. inclinada*, inclined table ; *m. redonda*, round-buddle, *see u. m. cónica*. NOTE.—The tables used in mech. prep. are divided into *mesas llenas* (Ger. *Vollherde*), and *mesas vacías* (Ger. *Leerherde*). (2) *See meseta* (1) ; (3) *m. de revolver*, transp. turntable, *see tornamesa* ; (4) the complete frame of a windlass [*torno* (2)] ; (5) each half of the frame of a windlass [*torno* (2)], united above by the *pastores*, and below by the *muertos* ; (6) Mex. hearth of furnace (Dwight), *see hogar* (1) ; (7) *see meseta* (2) ; (8) *m. de piedra*, Chañarcillo, Chile, the smooth and polished face of a sterile limestone, which separates the latter from the metalliferous limestones occurring above it, *see u. manto* (1) ; (9) principal facet of a diamond or other precious stone.

**MESETA**, (1) landing-place of a staircase, *syn. mesa* (2), *mesilla* ; (2) plain on the top of a mountain, elevated plain or plateau, tableland, *syn. encimada*, *mesa* (7), equiv. Port. *rechano*, *see llano*, *comp. campos* (7) ; (3) step of an underhand stope, *syn. banqueta* (2).

**MESILLA**, *see meseta* (1).

**MESURA**, obs. measure, *see medida* ; “ las particulares reciben del rey la concesión de un cierto número de *meduras* en la dirección de una veta ó un manto ” (Humboldt).

**METAL**, (1) metal ; *m. nativo* or *virgen*, native or virgin metal ; *m. en barras*, bullion, *see barra* (3) ; (2) alloy, as brass, latten, *see bronce* (1) ; *m. blanco*, white metal ; *m. campanil*, bell-metal ; *m. de imprenta*, type-metal ; (3) ore, *syn. frutos* (2), *mena* (2), *mineral* (2), *piedra mineral*, equiv. Port. *minerio*, Ouro Preto, Braz. *formação* (1), Fr. *mineraí*, Ger. *Erz* ; *m. azul*, galena ; *m. azul de plata*, argentiferous lead ore ; *m. azulado*, selbrite, *see azul de Catorce*, *u. plata* (2) ; *m. calichoso*, Mex. feldspathic ore ; *m. cenizo*, chloride of silver, *syn. plata ceniza* ; *m. común*, third class or ordinary ore, *see u. despoblado*, *da* ; *m.*



de crudo, Peru, ore composed of oxides, chlorides, etc. ; **m. de beneficio**, San Dimas, Dur. Mex. second-class ore worked by the patio process ; **m. de color**, Cerro de Pasco, Peru, oxidised ore of copper [*comp. m. negro* (*b*) below] ; **m. de exportación**, San Dimas, Dur. Mex. first-class ore or prill, *see u. granza* (1) and *tierras* (4) for third and fourth ; **m. de labores**, smalls from mine workings ; **m. de pie**, Mex. ore amenable to the patio process ; **m. de pinta**, silver-bearing ore ; **m. de primera (clase)**, first-class ore, *syn. broza, gabarro* ; **m. de quema**, Peru, sulphide ore (Dwight) ; **m. de segunda**, second-class ore ; **m. en piedra**, ore in the rough, crude ore ; **m. flor**, *see cebadura* ; **m. gabarro**, large ore, *see gabarro* ; **m. granza**, smalls, *see menudo* ; **m. hecho**, selected ore, prill, *see pepena* (2) ; **m. jugoso**, Mex. wet ore, *i.e.*, lead ore (Dwight) ; **m. machacado**, native gold or silver in thin leaves sometimes occurring in veins (Acad.), *see machacado* ; **m. negro**, (*a*) blende (Dwight) ; (*b*) Cerro de Pasco, Peru, sulphuretted ores of copper ; **m. negro argentífero**, *see cobre* (2) **gris** ; **m. noble**, free-milling ore, or ore which can be treated by the patio process ; **m. ordinario**, *see u. despoblado, da* ; **m. pepena**, *see pepena* (2) ; **m. plomoso**, leady ore ; **m. plomoso reluciente**, *see u. soroche* (2) ; **m. verde**, embolite, *syn. plata* (2) **verde** (*a*) ; **metales de labor**, *see aplomados* ; **metales de patio**, *see negros* (4) ; **metales de fundición**, *see fuego* (3) ; *see acerado, acopolado, ayuda* (1), **azogue** (2), **azurronado**, **blanca** (1), **cálido**, **cardenilla**, **cazo** (4), **cebo** (1), **correa** (3), **china** (2), **corrido**, **despoblado** (3), **frío** (3) and (4), **fuego** (3), **hierroso** (1), **negrillo**, **negro**, **pastoso**, **rayado** (2), **tonel** (4), **verde**, *also u. names of metals, etc.* ; (4) Almaden, Sp. rich ore of quicksilver, *comp. china* (2), **requiebro** (2), **vacisco** ; (5) **acostarse el metal** = **acostarse la vena**, *see u. acostar*.

**METALADA**, Mex. discovery of ore in barren working (Dwight).

**METÁLICA, METALURGIA**, metallurgy, *syn. obs. mineralurgia*.

**METALÚRGICO, CA**, adj. relating to metallurgy.

**METALÚRGICO**, metallurgist, *syn. obs. mineralurgista*.

**METANO**, *see u. hidrógeno*.

**METAPILES**, Mex. (1) grindstones (*e.g.*, used in the **tahonas**), *see voladora* (3)—spelt also **metlapiles** ; (2) pigs of copper used in hot amalgamation (Elwes), *see lingote*.

**METATE**, Mex. (1) a curved stone, in the shape of an inclined plane, resting on three feet, used for grinding maize for **tortillas**, or cacao for chocolate—from Aztec, **metlatl** (Velázquez) ; in prehistoric times these and **metapiles** (1) were used by Indians for grinding ore (Brackel-Welda), *comp. u. moler* ; (2) iron bucking-board for grinding ore-samples (Dwight).

**METAZITA**, *see arkosa*.

**METER**, **m. el ramal** (3), Villanueva del Rio, Sevilla, Sp. c.m. to make the upper half of an inclined plane, the lower half or **banquete** being opened up afterwards (Molina) ; **m. tonga**, *see colgar* (1) ; **meterse en ganga**, to take horse, *see caballo* (5).

**METLAPIL**, *see* **metapiles** (1).

**MÉTODO**, (1) particular method of working deposits, *syn.* **labor** (3), **trabajo** (3); **m. ascendente**, opening out a shaft by rising; **m. descendente**, ditto, by sinking; **m. á través**, *see* **través**; **m. cuadrado**, square method of cutting peat; **m. hidráulico**, hydraulic mining; **m. horizontal ascendente**, *see u. faja* (3); **m. horizontal descendente**, *see u. tajo* (4); **m. inclinado**, *see u. testero* (3); **m. longitudinal**, longitudinal method of cutting peat; **m. por hundimiento**, longwall, *see u. labor* (2); **m. vertical** = **Fr. méthode vertical**; method of tunnelling, *e.g.*, **m. ascendente ó inglés**, ascending or English method, **m. descendente ó belga**, descending or Belgian method, **m. mixto**, mixed method; (2) **met.** and **chem.** method or process, *see* **vía** (6).

**METRO**, (1) metre = 3·280869 feet or 39·370432 inches; (2) **surv.** metrical measuring-tape, *see* **cinta** (1).

**MEZCLA**, (1) common mortar, *see* **argamasa** (1); **hacer m.**, to temper the mortar; (2) **Mex.** furnace-charge (Dwight), *see u. carga* (4).

**MEZCLAR**, to temper mortar.

**MEZCUITLTL**, **Mex.** Aztec name for the opal (**ópalo**).

**MEZQUITE**, the mezquite shrubs of Mexico, (1) the honey-mezquite (*Prosopis juliflora*) yielding the algarroba pods; (2) the screw-bean (*Prosopis pubescens*) (Velázquez).

**MICA**, (1) mica, *syn.* **espejuela** (2), **Ant. Col. juan blanco** (2); (2) **Venez.** miners' term for small crystals of iron pyrites (Dr. Foster), *see* **pirita**; (3) **Ant. Col.** miners' term for molybdate of lead; (4) magnetic pyrites, *see u. pirita*.

**MICA-PIZARRA**, micaceous schist.

**MICASQUISTO**, mica-schist.

**MICHE**, **Fresnillo, Zac. Mex.** a mixture of galena, blende and iron pyrites, the two first silver-bearing; it is not liked by the miners; in **Santa Cruz de Alayá, Sinal.** dry black stuff found in veins, of the colour of toasted coffee, disliked by the miners, *see* **plata** (2).

**MILLA**, mile.

**MILLÓN** (million), **Mex.** an ore-pile (Dwight), *see* **montón** (1).

**MILREIS**, **Braz.** 100 reis, 1 rei is about one-ninth of a cent, a milreis = \$1.12, or worth 2s. 3d. of our money.

**MIMBRES**, osier-twigs, *see u. banasta, cesta*.

**MINA**, (1) deposit of mineral, *see* **criadero** (1); (2) mine, *syn.* **obs. almadén**, **arrugia**, **obs. minera**, mineral (3), **equiv. Port. mina**, **Fr. mine**, **Ger. Grube**, *see* **cata** (1) and (2), **contramina**; **m. de carbón**, coal mine (**Ger. Steinkohlengrube**); in **Mex.** under the old Ordenanzas, the **descubridora** was the first one on the vein, or on a new vein in the same mountain, the rest were **minas ordinarias** (**Gamboa**), *see* **descubridoro**, **ra**; for alluvial mines, *see* **plácer**; *see u. agotado*, **da**, **amparado**, **da**, **asiento** (4), **cogollero** [*u. cogollo* (2)], **jornalera**, **matera**, **tonga** (2); (3) ore, *see* **metal** (3); **m. de bronce**, bell-metal ore; **m. de plomo**, **plumbago**; **m. aurífera de Transilvania**, graphic tellurium; (4) sub-

terranean passage, open artificially, to conduct waters or establish other communication (Acad.), *see* **tunel** ; (5) spring, *see* **manantial**.

**MINADO**, underground working, *see* **labor** (2) ; **minados antiguos** = "old man."

**MINADOR**, miner, *see* **minero** (2).

**MINAL**, adj. belonging to a mine.

**MINAR**, to mine, equiv. Port. **minerar**.

**MINEIRO**, Port. miner, *see* **minero** (2).

**MINERA**, obs. mine, *see* **mina** (2).

**MINERAÇÃO**, *see* **mineraje**.

**MINERAJE**, mining ("labor y beneficio de las minas," Acad.), equiv. Port. **mineração**, *see* **laboreo**.

**MINERAL**, adj. aguas minerales, mineral waters ; **pedra m.**, ore, *see* **metal** (3).

**MINERAL**, (1) mineral or ore, *see* **metal** (3) ; (2) spring of water, *see* **manantial** ; (3), mine, *see* **mina** (2) ; (4) mining district, *see* **real** (1).

**MINERALIZAR**, to mineralise ; **mineralizarse**, to be charged with mineral substances (of subterranean waters).

**MINERALURGIA**, *see* **metalurgia**.

**MINERALURGISTA**, *see* **metalúrgico**.

**MINERAR**, Port. to mine, *see* **minar**.

**MINERÍA**, (1) art of mining, *see* **laboreo** ; mining industry ; **diputación de m.**, Span. Am. under the **Ordenanzas**, a tribunal cognisant of mining matters, elected in most cases by the mine-owners of the district, *see* **diputación** ; (2) personnel of a mine, etc.

**MINERIO**, Port. ore, *see* **metal** (3).

**MINERO**, **RA**, adj. pertaining to the art or industry of mining, *see* **pájaro minero**.

**MINERO**, (1) a mine (under the old laws), *see* **mina** (2), or mineral deposit, *see* **criadero** (1) ; (2) miner, *syn.* **minador**, equiv. Port. **mineiro**, Fr. **mineur**, Ger. **Bergmann**, *see* **carbonero** (2), *comp.* **barretero**, **operario** ; **m. al destajo**, tut-workman ; for miner's dress, *see* **u. vestido** ; one who possesses a theoretical and practical knowledge of the art of mining ; (3) Mex. chief miner, underground captain or agent, *syn.* **minero mayor**, *comp.* **mandón**, **sotominero** ; **mineros de cuarto**, underground captains or shift-bosses, their assistants are **coleros** and **trazadores** ; (4) Cerro de Pasco, Peru, mine-owner, *see* **propietario**.

**MINETA** (little mine), (1) Peru, small mine chamber or cavity (Dwight) ; (2) rock composed of felspar and biotite mica, sometimes with chlorite, quartz and hornblende, a mica-syenite or **minette** (Fr.).

**MINIO**, red lead or minium, *see* **azarcón**.

**MINISTERIO**, ministry ; **M. de Hacienda**, Ministry of the Exchequer or Treasury (in Mex. corresponds to Treasury Department of U.S.A.) ; **M. de Fomento**, Sp. Ministry of Public Works and Instruction, Span. Am. Ministry of Encouragement or Promotion, *see* **fomento** (2).



- MIÑÓN**, (1) prov. slag of iron, *see* **escoria** (1); (2) Vizcaina, Sp. iron ore of an earthy aspect (Acad.), *see* **hierro** (4).
- MIRA**, (1) sight of surveying instruments, etc.; (2) **miras**, uprights (**reglones**) used in levelling a course of bricks or stone, etc., *comp. u. nivel* (1); (3) surv. graduated rule used for levelling.
- MITA**, (1) under Spanish rule, obligation imposed on the Indians to work the mines, and enforced from 1548 to 1729, when it was suppressed. They were drawn by lots, one in seven being taken [**mitayo** (1)]. The **mita** was used largely in Chile, Peru, Colombia and other S. American countries, but not in Mexico, *syn.* **quatequil**, **tanda** (2); (2) Peru, tribute paid by the Indians.
- MITAYO**, (1) Indian chosen by lot to serve his turn of compulsory labour, *see* **mita** (1); (2) Peru, Indian who collects the tribute or **mita** (2).
- MIXTO, TA**, adj. mixed; **plata mixta** or "**mixta**," Mex. silver alloyed with gold; for **método mixto**, *see u. método*.
- MOBRE**, **piedra de m.**, flint, *see* **pedernal**.
- MOCA**, *see u. calcedonia*.
- MOCHETA**, **m. blanca**, Pachuca, Hid. Mex. rhyolitic tuff used in masonry work, *see* **riolita**; **m. morada**, dacite, similarly used, *see* **dacita**.
- MOCHUELOS**, *see u. taraja*.
- MOCO**, (1) scoria of iron, *syn.* **m. de hierro**, *see* **cagaferro**; (2) **m. de hierro**, El Caratal, Venez. brown iron ore, *see* Fig. 20 *c, d*; ferruginous gold-bearing gravel, *see* Fig. 21; highly ferruginous rock, viz., (*a*) conglomerate, (*b*) grit, (*c*) breccia, (*d*) pisolitic brown iron ore (Dr. Foster). When **m. de hierro** occurs as a ferruginous conglomerate it is regarded as an indicator for gold (G. P. Ashmore and C. Seale).
- MODELO**, model, standard, pattern, *see* **plantilla** (1).
- MODERADOR**, the regulator of a pneumatophore (**aerofora**).
- MOFETA**, (1) pernicious gas found in mines, generally CO<sub>2</sub> or CH<sub>4</sub> (Acad.); (2) c.m. after-damp, *syn.* **bochorno** (2), *comp. u. ácido* (1), **grisú**, *u. hidrógeno*.
- MOGINO**, metal m., Guadalcázar, S. L. Pot. Mex. miners' term for a mixture of argentiferous galena, **plata agria** (argentite?) chloride of silver, and telluride of silver (A. del M. de F.), found in the mine of San Juan, *see* **plata** (2).
- MOGOTE**, *see* **templador**.
- MOGROLLO**, Mex. silver ores composed of sulphides; "lo mismo que metal de cebo, por ser muy rico, y no se funde en horno, sino que asegura en el baño de el vaso" (Gamboa), *see* **cebo** (1), **plata** (2), *comp. molonque*.
- MOHO**, rust, *see* **orín**.
- MOJÓN**, (1) landmark, used to mark limits of **pertenencias**, generally a stone pillar, *see* **balate** (1), **coto** (1), **guardaraya** (1), **hito**, **majano**, **mojonera**, **monumentos**, **término** (1), *comp. pilar* (2); (2) heap or pile, *see* **montón** (2).
- MOJONA**, survey of land; the setting up of landmarks.

**MOJONACIÓN**, *see* **amojonamiento**.

**MOJONAR**, *see* **amojonar**.

**MOJONERA**, landmark, or place where landmarks are set, *see* **mojón** (1).

**MOLASA**, a var. of soft sandstone (**arenisca**), formed of fine grains of quartz, felspar, carbonate of lime and mica (**Bárcena**), *comp.* **maciño**.

**MOLDE**, mould, pattern ; **m. de lingote**, ingot-mould, *see* **planchera** (1) and (2), **plantilla** (1), **vacío** (2).

**MOLE**, **Ant. Col.** (1) **galena** ; (2) **moles** or **molis**, sulphides or concentrates consisting principally of **galena** ; “ la parte mas pesada y rica de las concentrados, generalmente la **galena**, **cobre gris** y **sulfuros pesados de la mena** ” (**G. F. Gamba**), *see* **jagua** (3).

**MOLEDORA**, **Peru**, upper millstone (**Dwight**), *see* **muela** (1).

**MOLER**, to grind or crush ore with rolls, to pulverise, *comp.* **machacar**, **majar** ; **m. á mano**, **Ant. Col.** to grind ore on a stone having a flat or concave surface [*comp.* **metate** (1)], or to break it up into small fragments in a wooden **pilón** (7), or in an iron mortar (**Uribe**), *comp.* **granzear** ; **m. en seco**, **Peru**, dry grinding ; **m. por sutil**, **Peru**, wet grinding (**Dwight**) ; **piedra de m.**, grindstone, *see u.* **piedra**.

**MOLERO**, *see u.* **tierras** (4).

**MOLIENDA**, (1) grinding or pounding ores, etc. ; wet grinding or pulverising in the **arrastre** (3), **pan**, etc., it follows the (usually) dry crushing known as **granceo**, *comp.* **maceo** ; (2) “ la molienda,” ores ground.

**MOLINATE**, *see* **arrastre** (3).

**MOLINERA**, **Sierra Almagrera**, **Sp.** carbonate of iron (**siderosa**).

**MOLINERO**, **Mex.** man employed in crushing ore with stamps or **molinos** (**Lyon**) ; **Ant. Col.** mill-man or one in charge of mill.

**MOLINETE**, (1) **Ant. Col.** a kind of windlass, used with a pulley, for raising weights, *e.g.*, stamp stems, *see* **torno** (2) ; (2) **m. del cabrestante**, barrel of the capstan, *comp.* **tambor** (1) ; (3) **m. de fricción**, friction roller, *syn.* **rodillo de fricción** ; (4) beater of the dolly-tub, *see* **batidor** (2) ; (5) float-board brake-regulator in automatic inclined planes, *see u.* **regulador** ; (6) **m. de acero**, steel-mill or disc used in collieries for lighting purposes in latter half of eighteenth century, *equiv. Fr.* **rouet à silex**.

**MOLINO**, (1) mill, strictly speaking a pulverising-mill only, but in **Mex.** = stamp-mill or crusher, and may be any ordinary mill, *see* **galera** (3), **hacienda** (4), **taller** (3), **zangarro** ; **m. chileno** or **de muelas verticales**, edge-mill ; **m. de agua**, water-mill ; **m. de arrastre** (3), **arrastre** ; **m. de aserrar**, saw-mill ; **m. de bolas**, ball-mill ; **m. de cilindros**, crusher or rolls ; **m. de estampar**, stamping-mill, *see* **ingenio** (2) ; **m. de herrería** or **de fragua**, forge-mill ; **m. de mano**, hand-mill ; **m. de mineral**, ore-mill ; **m. de muestra**, sample-grinder ; **m. de pisones** (2), **Col.** stamp-mill ; **m. de sangre**, mill turned by men or animals ; **m. de viento**, wind-mill, *see* **vela** (5) ; (2) ore sent to the mill ; (3) **Ant. Col.** **truk** or **buddle**, *see* **cajón** (5) ; (4) **Ant. Col.** **alluv. m.** sands

extracted from the cuts [*tajos* (5)] and accumulated in the ground-sluiice, or *canalón* (2); (5) *pedra de m.*, millstone grit, *see u. piedra*.

**MOLLEJÓN**, *pedra de m.*, sandstone, *see arenisca*.

**MOLONQUE**, Mex. a stone of ore, equally rich as *mogrollo*, but which contains more silver than gangue [*tierra* (6)] or, at least, in equal proportions (Gamboa); according to Guillemín-Tarayre = ductile argentite; *m. relumbroso*, Guan. stephanite, *syn. Zac. azul acerado, plata negra prismática, psaturosa, see plata* (2).

**MOLOQUITA**, a var. of agate (*ágata*) of dull green hue (Velázquez).

**MONDA**, mech. prep. a further separation by hand of mineral already hand-picked, *see apartado* (1); *banco de m.*, seat or bench for above, containing anvil for breaking up pieces with a hammer; *taller de m.*, sorting-floors for above.

**MONDAR**, (1) mech. prep. to sort hand-picked ore, *comp. apartar*; (2) to clean out a ditch (*acequia*), etc.

**MONDEO**, Braz. large reservoir, built of masonry, for collecting gold sands which are washed down the hill-side by water, from an upper reservoir (Paul Ferrand); Minas Geraes, settling-pit (H. K. Scott).

**MONEDA**, money, coin; *casa de m.*, mint.

**MONEDAJE**, duty on coinage, *see u. derecho* (2).

**MONEDAR**, **MONEDEAR**, to coin, *see acuñar* (1).

**MONO**, (1) Mex. timb. studdle or post, *see columna* (1); (2) Zac. Mex. timb. single prop, *syn. Guan. Mex. lagarto*, Serrata de Lorca, Sp. (sulphur mines) *palo* (4), Guan. Mex. *pausa*, *peón* (5), *pie* (6) *derecho*, *puntal* (3), *comp. entibo* (1), *pilar* (4), *testera* (6); (3) *fruta de m.*, *see u. fruta*.

**MONTACARGAS**, met. apparatus for raising loads, usually an elevator, *see elevador* (3).

**MONTADO**, DA, pp. of *montar*; *eje montado, see u. eje* (2).

**MONTAJE**, erection or mounting (of machinery, etc.), *syn. erección, montura* (3), equiv. Fr. *montage*.

**MONTAÑA**, (1) mountain, *see cerro* (1); Peru, inter-Andean region of forests (Raimondi); (2) *minerales de m.*, Mex. ores scattered through country-rock [*roca* (4)] and not found in deposits of any appreciable size.

**MONTANTE**, (1) carp. upright or post; *montantes*, uprights or main posts of a battery-frame, *syn. Col. columnas* (3); uprights or standards of a pulley-frame, *syn. pies* (7) *derechos*, *comp. pilaretes, see carena, ramplón*; (2) *montantes*, cheek-pieces of a ladder (Ponce de León). *see largueros* (1); (3) timb. leg-piece, *see peón* (4); (4) b. constr. jamb or jamb-post, *see jamba*.

**MONTAR**, (1) to erect machinery or plant, *syn. armar* (1), *eregir* (1), *plantar*; (2) *m. el agua*, Ant. Col. to establish ditches or leats for mining purposes (Uribe).

**MONTE**, (1) mountain, *see cerro* (1); for *oro de m.*, *see u. crespo, pa*; (2) wood, forest, *see manigua*.

**MONTEADOR**, Ant. Col. prospector who searches for mines in forests and mountains, *comp. buscones*.



**MONTERA**, (1) outcrop (Moncada), *see* **afloramiento**, **crestón**; (2) Huelva, Sp. gossan, *see* **colorados**; (3) alluv. m. overburden or cap, *syn.* Col. **barros** (3), Sandia, Peru, **carga** (11), **cubierta** (4), Ant. Col. **desmonte** (4), **materia estéril**, equiv. Fr. **ciel**, Ger. **Ueberlagerung**, *see* **creminel**, **desmontar** (2) *comp.* **segullo**.

**MONTÓN**, (1) heap or pile, *see* **terrero** (1), **tinada**; Mex. small heap of ore-mud for amalgamation, *comp.* **lamero** (2); pile of ore, *syn.* Mex. **millón**, **mojón** (2), Mex. **pila** (6) **de mineral**, **pilada** (2), Mex. **trilla** (1), *see* **tequio** (4), **telera**, **torreras**, **trinchera** (2), *comp.* **tases**; (2) Mex. a weight varying from .75 to 1.62 tons (T. Egleston); in Bolaños = 15 **quintales**, in Aguascalientes, Catorce, Fresnillo, Ramos and Sombrerete = 20 **quintales**, in Pachuca, Real del Monte, Sultepec and Tasco = 30 **quintales**, in Guanajuato = 32 **quintales**. NOTE.—The metrical system is now compulsory. (3) Ant. Col. an irregular mass or deposit; m. **acostado**, a mass intercalated in a sedimentary formation; m. **recto**, a wide vein between a stratified and non-stratified formation, *see* **masa** (3), **saco** (2); (4) **montones entrelazados**, stock-works (F. de P. Muñoz proposes the name **estovercas** for these), *see* **u fibra** (2), **cúmulo** (2); (4) m. **de leña**, cord of wood, *see* **cuerça** (5).

**MONTURA**, (1) *see* **caballería** (1); (2) saddle and trappings, *see* **silla** (1) (3) *see* **montaje**.

**MONUMENTOS**, Mex. landmarks or monuments; in mining claims usually built of masonry, and put at each corner of the mine or individual claim, *see* **mojón** (1).

**MORA**, Brit. Guiana and Hond., a tree, a species of fustic.

**MORADO, DA**, adj. violet, *see* **u. cobre** (2), **pórfido** (2).

**MORALLIÓN**, Boyacá, Col. inferior emeralds (**esmeraldas**), *comp.* **canutillo** (2).

**MORDAZA**, (1) mordazas, nippers (alicates) or pincers, [**tenazas** (2)]; (2) hoist. clamp used in looping up the end of a wire-rope, *see* **abrazadera** (1); (3) fish-plate (Ponce de León), *see* **eclisa**; (4) Mex. a mortise (Dwight), *see* **muesca** (1).

**MORILLO**, (1) ashlar, rubble, rubble-stone, *see* **mampuesto** (1); (2) m. **tallado**, dressed ashlar, *see* **sillar**; (3) Mex. round timber, from 5 to 7 inches in diameter, *see* **madera**; (4) m. **de descanse**, c.m. hoist. keps or keeps, *see* **taquetes** (1).

**MORO, RA**, adj. colour of red wine, for **peña mora**, *see* **u. peña** (4).

**MOROMORO**, Moquegua, Peru, argillaceous and impervious rock (H. C. Hurd).

**MORÓN**, hill, hillock, *see* **cerro** (1).

**MORRAL**, small corn-bag hung to the mouth of mules, *comp.* **cebadera** (1).

**MORRILLO**, pebble, *syn.* **morro** (3), *see* **guijarro** (1).

**MORRO**, (1) a more or less pyramidal or conical hill, headland, bluff, *see* **promontorio** (2); (2) met. furnace wall-accretions (Dwight), *see* **pegadura** (4); (3) pebble, *see* **morrillo**.

**MORRONGO**, *see* **zorra**.

**MORTAJA**, mortise, *see* **muesca** (1) ; **m. y lengüeta**, *see* **ranura**.

**MORTERO**, (1) Mex. mech. prep. stamp or stamper, *see* **calzadura** (2) ; (2) mech. prep. mortar of a stamp ; (3) assay. mortar, *comp.* **perol**, for pestle, *see* **maja** ; (4) mortar ; **m. común** or **mezcla**, ordinary mortar, *see* **argamasa** (1) ; **m. de tras**, *see* **tras**.

**MOSCAS** (flies), Mex. spots of black ore (usually sulphide of silver) disseminated in a quartzose gangue, *see* **mosqueado**, **da**.

**MOSCORROFIO**, **IA**, adj. **oro moscorroffio**, Ant. Col. gold in wire form or in filaments, of inferior colour and grade, and accompanying **guijas** (1) or pebbles ; angular gold and little rounded (Uribe).

**MOSQUEADO**, **DA**, adj., spotted ; **metal mosqueado** or “**mosqueada**,” Taviches, Oaxaca, Mex. name given to dark ruby silver (**petlanque oscuro**) occurring in separate grains or spots in quartz or other matrix, *see* **moscas**, **plata** (2).

**MOSTRADOR**, Mex. sampler (Dwight), *see u.* **cogedor**.

**MOTOR**, motor or prime-mover, *syn.* **primer móvil** ; el. motor ; **m. de vapor**, steam-motor, *see* **máquina**.

**MOVEDIZO**, **ZA**, adj. movable, *see u.* **terreno** (2).

**MÓVIL**, adj. movable, *see u.* **bomba** (1).

**MÓVIL**, motor, *see* **motor**.

**MOVIMIENTO**, movement ; mech. motion.

**MOYA**, volcanic clay (Ponce de León), *see* **arcilla**.

**MOZO**, (1) boy, man-servant, man-of-all-work, (U.S.A.) roustabout (2) min. support on which the lever of a bellows [**fuelle** (1)] turns (Acad.).

**MUELA**, (1) upper millstone or runner, *syn.* **corredera** (1), Peru, **mole-dora**, **voladora** (2), **volandera** (2), *comp.* **solera** (2) ; (2) grinding-stone of an **arrastre** (3), *see* **voladora** (3) ; (3) **m. vertical**, runner of a Chilian mill, *see* **volandera** (1) ; (4) grindstone or whetstone, *syn.* **afiladera**, **aguzadera**, **asperón** (1), **esmoladera**, **pedra amoladera**, **pedra de afilar**, **pedra de amolar**, **pedra melodreña**, equiv. Port. **cote**, **pedra de rebolo**, Fr. **meule**, **pierre à aiguiser**, Ger. **Mühlstein**, **Schleisstein** ; (5) top. hill, steep at the top, and with a flat summit (Acad.), *comp.* **cerro** (1) ; (6) water sufficient to set a mill-wheel in motion—“**una muela de agua**.”

**MUELLAJE**, wharfage, dockage or harbour dues.

**MUELLE**, (1) mech. spring, *syn.* **resorte** ; **muelles**, springs fixed below the bearings of the axles of pulleys in order to neutralise sudden jerks in hoisting cages, *see u.* **resorte** ; (2) **muelles**, tongs used in mints (Acad.) ; (3) quay or wharf ; **m. de descarga**, load-wharf, *syn.* **des-embarcadero** (1), **embarcadero** (1), *see* **malecón** (1) ; (4) rail. high platform [**desembarcadero** (2)], covered or uncovered, for loading and unloading goods (Acad.).

**MUERA**, natural salt-water or brine, *syn.* **agua muera**, **salmuera**, *see u.* **sal** (1).

**MUERTA**, *see* **faena** (2).

**MUERTO, TA**, adj. dead ; **cal muerta**, slaked lime ; **obras muertas**, *see u. obra* ; **punto muerto**, mech. dead point ; **tierra muerta**, Col. earth of a **guaca** which has been disturbed at some period more or less remote—compact earth which has not been disturbed is known as **tierra virgen** (Uribe).

**MUERTOS**, the horizontal cross-timbers which unite the lower portions of the frame of a windlass, *see mesa* (5) ; mud sills or any horizontal timbers which are practically on a level with the ground, or with the floor of plats, etc., *see banco* (4) **de tierra**, **larguero** (4), **plancha** (6).

**MUESCA**, (1) carp. mortise, groove, notch, *see cadena* (8), **caja** (25), **cotana**, *u. empalme* (1), **empotrar** (1), **encaje** (1), **entalla**, **entallamiento**, **escopleadura** (1), **hueco** (4), **mortaja**, **ranura**, *comp. espiga* (2) ; **m. triangular**, (Professor Thompson's) triangular notch for measuring water ; **muescas**, notches of a Mexican ladder [**escalera** (2) **de m.**] (2) Peru, timb. hitch, *see huida*.

**MUESTRA**, sample ; specimen ; **oficina de muestras**, sampling-works.

**MUESTRARIO**, bor. collection of samples obtained by boring.

**MUEVE** (from mover), **m. de cuadrado**, *see cuadrado* (3) ; **m. de salmer**, *see salmer*.

**MUFLA**, (1) assay. muffle ; (2) Mex. a crude cupel-furnace [**horno** (2)] for treating rich ore on a bath of lead (Dwight), *comp. vaso* (2 *b*) ; (3) tuyere (twyer), *see tobera*.

**MULA**, she-mule, *comp. macho* (1) ; **m. de repuesto**, sumpter mule.

**MULATA**, Ant. Col. compact quartz, charged with lime and other matters, and rounded by friction, it is considered an inseparable accompaniment of gold, the miners say "mulata no duerme solo" ; **huevo de pajarito** is a small and ovoid mulata stone, **frisolita** is still smaller (Uribe), *see frisol*.

**MULATERO**, mule-driver, muleteer, *syn. muletero, mulero*.

**MULATO**, Span. Am. silver ore of a dark or coppery green colour (Acad.) ; **mulatos**, Peru, ores with sulphides predominating, they are transition oxysulphides ; Atacama, Chile, simple sulphide ores below the **pacos** and above the **negrillos** (1) ; *see frío, ía* (2), **plata** (2).

**MULERO, MULETERO**, *see mulatero*.

**MULETILLA**, surv. nail in the form of a cross, for attaching cord of hanging compass, *see brújula* (2).

**MULTA**, fine or penalty.

**MUÑÓN**, (1) met. trunnion of a Bessemer converter, etc. ; (2) gudgeon, *see guijo* (2) ; pin or gudgeon on the upper end of the vertical axle of a horse-whim, working in the bearing or pedestal [**cojinete** (1)] ; (3) the hard metal casing, usually steel, of a pillow-block, *comp. tejuelo* (2).

**MUÑONERA**, (1) trunnion-socket ; (2) mech. gudgeon-socket.

**MURALLA**, wall, *see muro* (1) ; **murallas abovedadas**, walls connected by an arch or vault, *see puquios*.



**MURETE**, (1) slight wall for an aqueduct ; (2) muretes, vent. small walls used for supporting tube for passing air-current from one drift to another, *see* **muro** (1).

**MURO**, (1) wall, *syn.* **muralla**, **pared** (1), *see* **arrimo**, **citara**, **cortina**, *u.* **mampostería** (2), **murete** (1) and (2) ; **m. de revestimiento**, retaining-wall or wall to resist lateral pressures (**Ezquerria**), *see* **jorfe** (1) ; **m. de sostenimiento**, wall to resist vertical pressures (**Ezquerria**) ; **m. seco**, dry wall, *syn.* **albarada**, **horma**, **empiedro**, *see* **pedriza** (3) ; (2) floor of a deposit or footwall of a vein, *see* **bajo** (3) ; (3) a mine-dam, *see* **cerramiento**.

**MUSGO**, moss.

**MUZO**, Col. wood of a tree, veined black and red, used for making furniture (**Velázquez**).

**NACIENTE**, Chile, east, (**oriente** or **este**).

**NACIMIENTO** (birth), place where a spring gushes out ; spring or source (**manantial**) ; **n. de un río**, head of a river.

**NAFTA**, naphtha or crude petroleum, *see* **petróleo**.

**NAIFE**, diamond in the rough, *see* **diamante**.

**NARIZ** (nose), (1) projecting point of a bridge or pier which breaks the violence of the current (**Velázquez**) ; (2) nozzle of a bellows, pipe, twyer, etc. ; (3) *see* **Fig. 24 b**, *u.* **cierre** ; (4) in smelting tin-ore, etc., the nose or appendix which forms in front of, and is attached to, the twyer, *comp.* **trompa** (2) ; (5) **tubo de n.**, mét. section of pipe, with connected orifice, which joins the blast-pipe to the twyer (**tobera**).

**NARRIA**, a sledge, *see* **rastra** (1).

**NATA** (cream), Mex. (1) litharge (**litargirio**) ; (2) **natas**, slag, *see* **escoria** (1).

**NATIVO, VA**, adj. native ; for **plata nativa**, *see* *u.* **plata** (2).

**NATRÓN**, natron or native hydrous sodium sesquicarbonate, *syn.* **sosa** (2), **trona**, **urao**, *see* *u.* **barrilla** (2), **tequezquite**.

**NAVETA**, bor. screw-plug or Kind's plug, equiv. Fr. **arrache-tuyaux**, **navette**, *see* **arrancatubos**.

**NAYFE**, Port. adj. rough (of a diamond).

**NEFRITA**, néphrite or jade, *see* **jade**.

**NEFRÍTICO, CA**, adj. **piedra nefrítica**, jade, *see* **jade**.

**NEGOCIACIÓN**, negotiation, management ; commerce ; Mex. a number of mines, worked as one undertaking by an individual, or association of individuals, whose quota of expenses and profits is divided into 24 **barras** (5), as they would be in working a single mine (**Ward**, 1828).

**NEGOCIO**, business, enterprise.

**NEGRILLO**, (1) **negrillos**, Chile, ores in which complex sulfarseniates and antimoniates of silver predominate, *syn.* Peru, **pavanados** (2), *see* *u.* **frío**, **ía** (2) ; (2) **Caracoles**, Chile, sulpho-iodide of silver (**Domeyko**), or a mixture of chloro-iodide of silver, with sulphide of silver, sulphide of lead and carbonate of lead (**Dr. Percy**), *see* **plata** (2) ; (3) native silver of a black colour (**Guim**), *see* **plata** (2) ; (4) Mex. and Arg. argentite, *see* **plata** (2) ; (5) **stephanite** (**Velázquez**), *see* **plata** (2) ;

(6) **negrillos**, Huelva, Sp. ores rich in copper, and which are exported (R. Oriol); (7) Span. Am. ore of cupriferous silver of very dark colour (Acad.).

**NEGRO, GRA**, adj. black; **metal negro**, Mex. blende, *see blenda*; **piedra negra**, Venez. greenish grey felstone; **plata negra**, argentite, *see u. plata* (2); **plata negra prismática**, stephanite, *see u. plata* (2).

**NEGRO**, (1) Peru and Chile, **caliche** (1), of a dark colour and close texture; (2) Guadalcázar, S. L. Potosí, Mex. hepatic cinnabar of a lead-grey colour, compact, and of a slaty texture (A. del M. de F.), *see mercurio* (2); (3) Mex. very rich tetrahedrite, *see abronzado* (2); (4) **negro-negro**, Col. black micaceous schist—silver veins in this kind of “country” are decomposed and sterilised (Uribe); Tolima, Col. **negro** = aluminous schist (Gamba); (5) **negros**, Mex. sulphuretted ores of silver, *syn. metales de patio*, Chile, **prietos**, *see plata* (2), *comp. cenizo-negro, colorados*; (6) **negros**, Fresnillo, Mex. iron pyrites containing very finely disseminated native silver and argentite (Burkart), *see plata* (2), *comp. azulaque* (4), *colorados*; (7) Charcas, S. L. Potosí, Mex. antimonial grey copper ore, blende and galena, mixed with copper and arsenical iron pyrites, most of the silver occurring in the first two (Dr. Percy), *see plata* (2).

**NEME**, Ant. Col. oxide of manganese, *see canturrón, manganeso* (2).

**NERVADURA DE MINERAL**, leader, *see vetilla* (1).

**NERVIO** (nerve), (1) longitudinal rib or strengthening-piece of a cylinder; **nervios**, strengthening-pieces of cast-iron tubing, etc.; (2) parting in a seam of coal, etc., equiv. Fr. *nerf*, *see caballo* (4).

**NETO, TA**, adj. **peso neto**, net weight; **producto neto**, net produce.

**NICLE**, a var. of chalcedony (*calcedonia*) with some stripes darker than others, *see cuarzo*.

**NIDADA**, n. de oro (lit. nestful of gold), nest, *see nido*.

**NIDO**, nest (of ore, etc.), *syn. nidada, comp. bolsa* (1), *bolsada* (3), **nódulo** (1), **riñon** (1).

**NIEGAS**, Cartagena, Sp. miners' name for the sterile parts (*estéril*) of a deposit (Moncada).

**NIÑO, ÑA**, adj. **oro niño**, Ant. Col. float gold, *syn. oro de espuma*.

**NIPA**, Phil. kind of palm-tree; from the leaves are made mats and thatches for roofs (Velázquez).

**NÍQUEL**, (1) nickel; n. **bronce**, nickel-bronze; (2) ore of nickel; n. **arsénical**, niccolite [*NiAs*] *syn. niquelina, see u. ocre*.

**NIQUELINA**, niccolite, *see níquel* (2).

**NÍSPERA**, Nicarag. a timber-tree, *Achras sapota*, *syn. zapote*.

**NÍSPERO**, Panamá, a hard red-wood of great durability.

**NITRAL** nitre-bed or deposit.

**NITRERÍA**, saltpetre-works.

**NITRO**, (1) nitre or saltpetre, *syn. nitro potásico, salitre*; (2) nitrate of sodium, nitrate, *see caliche* (1).

**NIVEL**, (1) surv. level or levelling instrument ; **n. de agua**, water-level ; **n. de aire**, air-level ; **n. de albañil**, mason's level, *see* **igualta** (3), **reglón** (1), *comp.* **mira** (2) ; (2) level ; **n. del agua**, water-level ; **n. del mar**, sea-level ; (3) level or gallery, *see* **galería** (1) ; (4) **niveles**, watery strata, *syn.* **capas** (1) **de agua**, equiv. Fr. **niveaux** ; (5) Sant. Sp. beds [**bancos** (3)] in quarrying calamine (Molina).

**NIVELACIÓN**, (1) levelling ; (2) surv. levelling, grading.

**NIVELADOR**, leveller.

**NIVELAR**, (1) surv. to level ; (2) to make even or level, *see* **maestrear** ; **n. los tajos** (4), to square up the faces with a pick.

**NIVELETA**, (1) surv. levelling-staff (Ponce de León) ; (2) boning-stick (of builders), equiv. Fr. **nivelette**.

**NOBLEZA**, richness (of a vein).

**NOCHEROS**, Ant. Col. men who work on the night shift, *see* **relevo**.

**NOCHISTLE**, (1) Tasco, Guerr. Mex. light ruby silver, *see* **petlanque**, **rosicler** ; (2) Mex. copper pyrites, *see* **u. bronce** (3).

**NÓDULO**, (1) nodule, *see* **u. gabarro**, **geoda** (1), **papa** (2) ; (2) Ant. Col. point in which the ore of a mine appears very abundant, *syn.* **nido**, **riñón** (2).

**NOGAL**, **NOGUERA**, (1) walnut-tree ; (2) wood of (1).

**NOLÍ**, Ant. Col. miners' terms for oxysulphide of antimony resulting from decomposition of stibnite (Angel), *see* **antimonio** (2).

**NOQUE** (tan-pit), (1) Peru, crude settling-tank, built of stone for pulp, between mill and **patio** (Dwight), *syn.* **cocha** (1) ; (2) Chile, large stone receptacle for the calcination of ores, exposed to the air ; in the **patio** process, stone trough in which the amalgam is washed, *syn.* **dornajo de piedra**, **maritata**.

**NORIA**, (1) an endless chain, with buckets attached, revolving round a wheel, commonly 20 feet in diameter, when used for raising water out of wells, etc. It was used inside mines for drawing water out of sinks, which were carried down to a greater depth than the shafts, but the **noria** is no longer used in the mines of Spain (Molina). In salt-works cordage is sometimes used instead of chain, and the buckets are made of tanned hide or wood. The wheel sometimes has pegs, and is moved by men's feet. (2) Draw-well, deep well, *see* **pozo** (1) ; (3) any wheel for drawing water with a long rope.

**NORIERO**, man who drives horses or mules working a **noria** (1).

**NÚCLEO**, (1) hoist. iron cylinder of a bobbin or reel, *see* **bobina** (1) ; (2) **n. de roca**, bor. core, *syn.* **testigo**.

**NUDO**, (1) knot (of ore, etc.) ; (2) knot of mountains ; " **punto donde se unen ó cruzan dos ó mas sistemas de montañas** " (Acad.) ; " **e punto de unión superior de varias cuchillos, cordilleras ó contrafuertes que se separan divergentemente en varias direcciones** " (Muñoz) ; (3) Mex. knot or button on traction-rope of tramway (Dwight).

**NUEZ** (nut), (1) **juego de n.**, mech. ball and socket joint, *see* **juego** (3) ; (2) transp. in the endless-chain system of haulage, a kind of covered pulley, having six faces, worked by compressed air.



**NUSCO**, Amazonas, Peru, a mixture of oxide of iron and manganese with foliated talc and quartz, containing gold—the richest in mineral and the easiest to work (Sir C. Mansfield), *see oro, comp. hígado* (1), *panal de rosa*.

**ÑUZCO**, (1) Peru, small coal, *see u. menudo* ; (2) Hualgáyoc, Peru, ore spalled to the size of a walnut, *see granado* (3) and *pachapampa*.

**Ñ.** Words with this letter will be found arranged alphabetically under **N**.

**OBLICUO**, **UA**, adj. oblique ; **veta oblicua**, a vein coursing obliquely through a mountain.

**OBRA**, (1) work, *see trabajo* (1) ; **o. de manos**, hand-labour ; (2) mine working, *see labor* (2), *trabajo* (2) ; **obras de desfrute**, workings on ore ; **obras muertas**, dead workings or workings on dead rock, *see faena* (2) ; *see u. prestado, da* ; (3) **obras**, Almaden, Sp. masses of solid masonry, used for filling (Molina), *see mampostería* (2), *u. reservas* (2) ; (4) **o. de fábrica**, bridge, viaduct, culvert or other similar structure in ways of communication (Acad.) ; (5) met. narrow and prismatic part of a blast-furnace immediately above the crucible (Acad.), the “hearth.”

**OBRADOR**, (1) workman (*trabajador*) ; mechanic ; (2) workshop, machine-shop, *see taller* (1).

**OBRADORA**, (*buena ó mala*), Mex. rock that breaks well or badly (Dwight).

**OBRAJERO**, foreman, overseer, *see capataz* (3).

**OBrero**, workman, day-labourer, *see trabajador*.

**OBRIzo**, **ZA**, adj. pure, refined, of high standard (of gold) ; **obrizo** is sometimes used as a substantive, and is then synonymous with **oro de ley**, *see ley* (3), **oro**.

**OBsIDIANA**, obsidian or volcanic glass (**vidro volcánico**), *syn. espejo de los Incas* ; it is the **esponja** (3) of the Incas (Humboldt), **ixtete**, **itztli** or **itztle**, of the Aztecs, and **tzinapu** of the Tarascans (Orosco y Berra) ; var. are **o. azulada**, **o. dorada**, **o. negra**, **o. plateada** or **argentina**, **o. roja** or **de Pénjamo** (much prized by the ancient Mexicans, for fragments of it are found in their **coesillos** or tombs), **o. verde**. Besides Navajas (*see itztle*), it is found near Tulancingo, Mex. It occurs in trachyte formations generally ; pitchstone (**pie dra pez**) and pearlite are often associated with it, *see pómez, u. riolita* (1).

**OBTURADOR**, **OBTURATRIZ**, (1) mech. trap or plug ; **o. para tubos**, tube plug or stopper ; *see u. válvula* ; (2) plate for collecting salt in Paccard's system, *see calorífero* ; (3) **o. cónico**, mech. mitre valve ; **o. neumático**, valve used for shutting off boiler for tube-collector in case of cracking or breaking of tubes (invented by Naissant, and applied by Remaux to hoisting engines).

**OBTURAR**, to stop or plug.

**OCHAVA**, eighth part of anything ; 1 ochava = 2 adarmes or 72 granos, *see marco* (1).

**OCINADO**, *see u. tiro* (1).

**OCONAL**, Peru, swampy pasture-land, *comp. pantano*.

**OCOTE**, (1) Mex. a very resinous kind of pine, used for lighting furnaces, etc. ; (2) Span. Am. name generally given to a kind of laurel used for timbering.

**OCRE**, ochre ; *see u. amarillo, lla, azufrado* (1), *bolo* (2), *u. caparrosa* (1), *carmín, sil* ; *o. almagro, colorado or rojo*, red ochre, *see almagre, lápiz* (2) ; *o. amarillo, or o. amarillo de hierro*, yellow ochre, *see tecozahuítl* ; *o. de níquel*, nickel ochre or annabergite, *see níquel* (2).

**OFICIAL**, (1) workman, *see trabajador* ; (2) *o. de albañil*, journeyman or master-bricklayer ; *o. de carpintero*, journeyman or master-carpenter, *see maestro* (2) ; (3) official or boss.

**OFICINA**, (1) workshop, *see taller* (1) ; (2) office, counting-house, *syn. despacho* (1) ; (3) Guadalcázar, S. L. Pot. Mex. a furnace [*horno* (2)] containing twelve or more clay-retorts, six on a side, for reducing quicksilver ores ; (4) Peru, Chile, nitrate-works, *syn. o. de beneficio* ; *o. de concentración*, concentration-works ; *o. de fundición*, smelting-works, *see hacienda* (3) and (4).

**OHMIO**, *el. ohm* (Acad.).

**ÓIDO**, (ear), (1) blast. orifice left in the tamping for the insertion of the fuse ; (2) vent. inner opening of a fan (*ventilador*), *comp. canalizo*.

**OIRO**, *see ouro*.

**OITAVA**, Port. one dram or the eighth part of an ounce (*onça*) ; in Braz. = 1111214 oz. troy or 55·34 grains, *see vintem*.

**OJAL** (button-hole), hoist. loop used in capping ropes, etc. ; loop tied to rope of a hand-winch, when used for raising or lowering men, etc.

**OJO** (eye), (1) bunch or small spot of ore in a lode, small irregular deposit, equiv. Port. *olho* (2), *see clavo* (2) ; *o. de polvillo*, spot of rich ore ; (2) *o. de agua*, spring that spouts in a plain (Acad.), *see manantial* ; (3) *o. de gato*, cat's eye, *see cuarzo* ; (4) *o. de víbora*, Zac. Mex. yellow blende, *see blenda* ; (5) *o. de muerto*, Cauca, Col. blue porphyry, so called because of the large size and dead-white colour of the crystals (Granger and Treville), *see pórfido* (1) ; (6) opening in the wall of certain wells for the passage of the water which drives the wheel (Acad.) ; (7) *o. de una cigüeña* (3), eye of a crank, *see manubrio* (3) ; (8) hole through the centre of a wheel for the axle, axis or shaft ; (9) eye of a hammer (*martillo*), *see olho* (3) ; (10) *ojos*, hoist. eyes of a kibble [*tonel* (2)], usually four in number, for hooking on to a chain. NOTE.—In Engl. the small handle at the base, for convenience in tipping, is sometimes called the “eye.” (11) *O. del horno*, met. eye of the furnace, or bottom opening of the shaft or tunnel, *see cuba* (4) ; (12) span of a bridge, *see luz* (4) ; (13) mesh, *see malla* ; (14) met. peep-hole or port-hole of a blast-furnace (Ibran), *see lumbrera* (3).

**OLHO** (eye) (1) Braz. vug or druse, *see drusa* ; (2) Braz. swell or bunch of ore, *see bolsa* (1), *ojo* (1) ; (3) Port. iron ring in which the helve of an axe is fixed, eye of a hammer, etc., *see ojo* (9).

- OLIGISTO**, specular iron ore (Fr. *fer oligiste*); **o. micáceo**, micaceous iron ore; **o. rojo**, hematite.
- OLLA**, (1) round earthen pot; Mex. clay water-jar; (2) Mex. slag-pot (Dwight); (3) whirlpool, *see* **remolino**.
- OLLAR**, adj. **piedra o.**, a var. of serpentine (*serpentina*), composed principally of tale and chlorite, and from which vases are cut in certain places (Acad.); pot-stone.
- OLLERO**, (1) potter, *see* **alfarero**; (2) Mex. slag-pot puller (Dwight).
- OLLETAS**, Ant. Col. spherical, cylindrical or tubular cavities (geol. pot-holes) formed in the solid bottoms of rivers by the friction of water, or by that of the rocks and sands which it carries (Uribe).
- OLMO** (Port. *olmeira*), elm-tree, or wood of the elm.
- ONDULACIONES**, *see* **undulaciones**.
- ÓNICE**, **ÓNIQUE**, **ÓNIX**, (1) onyx, *see* **cornerina** (2); (2) **o. mexicano**, Mexican onyx or lime alabaster, *see u. puebla, tecali*.
- ONZA**, (Port. *onça*), ounce, 1 **onza** = 1.0148 oz. avoird. or 0.925 oz. troy about—442.72 grains or 28.75 grammes—the **onza** of Castile is divided into 8 dracmas and 16 adarmes.
- OPALADO, DA**, adj. *see u. feldeespato*.
- ÓPALO**, opal, the *mezcuitlatl* of the Aztecs; del Río names the following var.: **o. fino**, **o. común**, **semiópalo**, **xilópalo** (wood opal), **jaspe ópalo** (opal jasper), **hialita** (hyalite or Muller's Glass), **menilia** (menilite); **o. de fuego** or **girasol** (fire opal) is a var. of **o. común**; other var. are **ópalos húngaros**, **arlequines**, **lechosos**, etc.; **ópalos nobles** are the rare or precious opals. The opals of Esperanza, Quer. Mex. occur in a brownish red quartz porphyry (**pórfido**) as **ópalos finos**, **arlequines**, **girasoles de fuego**, **semiópalos**, etc.
- OPCIÓN**, option, (on a mining property, etc.).
- OPERARIO**, workman, labourer, *see* **trabajador**; working miner, *comp. minero* (2); **o. de gavia**, bearer of loads, *see* **portador**.
- OQUEDAD**, empty space, concavity, hole, pore, cavity; channel of communication between irregular deposits of ore.
- ORAL**, *ser un oral*, Ant. Col. phrase relating to the richness of a mine.
- ORDENANZAS**, laws, ordinances; those of Philip II. of Spain, Gamboa calls **O. del Nuevo Cuaderno** (Pamphlet), to distinguish them from the **O. del Antiguo Cuaderno** (E. A. Baca). The **O. de Minería**, or Mining Ordinances, came into operation in Mexico in 1784, and were replaced by the (first) **Código de Minas** in 1884; the **O. de Nueva España** were used in Peru from 1786 until the end of 1900.
- OREJA** (ear), (1) mech. lug, flange, ear, wing, *e.g.*, **trépáno de orejas**, bor. bit or chisel with wings; (2) **ajuste de o.**, Mex. timb. a joint between horizontal timber [**cincho** (3)] and stemple (**estemple**), *see* Fig. 25.



**ORGANAL**, Ant. Col. auriferous alluvial intercalated among stones or boulders, rendering its exploitation very difficult and dangerous, *see* Fig. 57, after Muñoz.

**ÓRGANO**, *see* *u. entibación*.

**ORIFICIO**, orifice, mouth, aperture; st. eng.

port. *o. de admisión*, *o. de entrada*, mech.

inlet; *o. de salida*, mech. outlet, *see*

*registro* (2); *o. equivalente*, vent. equivalent

orifice (Fr. *orifice équivalente*) of

Murgue, who divides all mines into three

categories, (a) *minas anchas* (Fr. *mines larges*), with orifice greater

than unity (1 square metre), (b) *minas medianas* (Fr. *mines moyennes*),

about equal to unity, and (c) *minas estrechas* (Fr. *mines étroites*), sensibly

less than unity; for *o. de paso*, and *o. de pérdidas*, consult Molina.

**ORILLA**, (1) shore of the sea, bank of a river, *see* *playa* (1); (2) *o. de*

*barro* or *de arcilla*, flucan or clay selvage, *see* *guarda* (1).

**ORILLAJE**, Mex. timb. sheet lagging (Dwight), *see* *revestimiento* (1).

**ORÍN**, rust of iron, *syn.* *herrumbre*, *moho*, *robín* (rust of any metal).

**ORITO** (dim. of *oro*), Ant. Col. traces of gold found in the *batea*.

**ORO**, gold, *syn.* Ecuador, *curi*, equiv. Port. *oiro*, *ouro*, Fr. *or*, Ger. *Gold*;

*o. bajo*, *see* *tumbago*; *o. cristalizado*, crystallised gold; *o. de aluvién*,

alluvial or placer gold, *see* *u. corrido*, *da*, *greda* (6); *o. de barranca*,

Ant. Col. gold from the cerros of Santa Rosa; *o. de lavadero*, wash

gold; *o. de ley*, gold of high standard, *see* *obrizo*; *o. de molino*, gold

obtained in trunking; *o. de monte*, gold extracted from the gold

mines of Angostura, Antioquia, Colombia; *o. de veta*, vein gold;

*o. en hojas*, leaf gold; *o. en pasta*, *bruto* or *virgen*, bullion, *see* *barra*,

(3), *oroche*; *o. en polvo*, or *o. empolvado*, gold dust; *o. libre*, free

gold; *o. molido á mano*, gold obtained by hand-grinding and dis-

tinguished by its form, the particles being similar to little cylinders

sharpened at their extremities; *o. negro*, Venez. gold covered by a

deep black to brownish red crust of iron oxide and organic matter

which will not amalgamate (G. C. Dubois), equiv. Braz. *ouro preto*;

*o. verde*, gold of a green colour; *see* *acerado* (1), *alfileres*, *astilla* (2),

*u. bola* (3), *u. bronce* (3), *u. cantera* (3), *u. colorados*, *congo* (1) and (2),

*copela* (3), *corte* (9), *crespo*, *pa*, *criadero* (4), *u. escama*, *espuma* (4),

*evaporado*, *frisol*, *granalla* (2) and (3), *guañín*, *u. guija* (2), *higado* (1)

and (2), *interés* (1), *jabón* (3), *jacutinga*, *jagua* (2), *jumos*, *lamina* (3),

*madre* (4) and (5), *manta* (4), *moscorrofió*, *mulata*, *u. niño*, *ña*, *nusco*,

*obrizo*, *orito*, *palacra* (1) and (2), *panal de rosa*, *panizo* (1), *piedra azul*

(*u. piedra*), *polvorilla* (2), *pórfido* (2), *quilate* (1) and (2), *rayado* (2),

*recogida*, *secadora*, *segullo*, *sil*, *tapanhoacanga*, *tepostel* (2), *tibir*.

**OROCHE**, (1) Mex. bullion containing both gold and silver, either of

which may predominate in weight or value, *doré*, *see* *u. oro*, *comp.*

*barra* (3), *palacra* (2); (2) *o. natural*, native auriferous silver or

electrum, *see* *electro* (2).



FIG. 57.—Organal (after Muñoz).

*a*, river; *b*, alluvium; *c*, organal; *d*, bed-rock or *peña*.

**OROYA**, Span. Am. hanging-basket or sling for carrying passengers and goods over rope-bridges ; it is generally made of leather (Velázquez), *see u. puente* (1), *tarabita*.

**OSARIOS**, Ant. Col. Indian remains found in clay vases, etc., *comp. guaca*.

**OTERO**, top. isolated hill in a plain, *comp. cerro* (1).

**OTORGADO**, grantee.

**OTORGANTE**, grantor.

**OTORGAR**, leg. to declare, execute, grant.

**OURO**, Port. gold, *syn. oiro* ; **o. amoadado**, coined gold ; **o. em pó**, gold dust ; **o. lavado**, wrought gold ; **o. preto**, Braz. black gold or gold discoloured by ferric oxide, *see oro negro u. oro*.

**OYAMEL, OYAMETL**, Mex. white pine (Chism), *syn. abeto* ; it is the chief wood used for timbering in the mines of Pachuca ; **abeto común** = Norway fir ; **abeto de California** = Douglas pine (Ponce de León).

**OYE ! (O-O-O-O-YE !)**, Mex. word used to call attention in a hoisting-shaft up to 200 feet deep, *comp. bueno* !

**PÁ**, Port. shovel ; **pá de ferro**, iron shovel, *see pala, shaula*.

**PABELLÓN**, p. de entrada, vent. large chamber leading to the inner opening [óido (2)] of a fan (*ventilador*) such as Ratteau's.

**PABILO**, wick of a candle, *see torcida*.

**PACA** (from Engl. pack), com. bale, pack, package.

**PACHAMANCA**, horno (2) de p., Peru, a small reverberatory furnace, of ancient origin, with a shallow basin like that of a cupelling-furnace (O. F. Pfordte), *see u. señorial*.

**PACHAPAMPA**, Hualgáyoc, Peru, ore picked out of the waste, the size of a walnut, *see granado* (3) and *ñuzco*.

**PACOS**, (1) Peru, silver ores, with oxide of iron, generally of a reddish colour ; red ores, rich in oxides, which take the name of *llampos*, if they are earthy, and *pedernales*, if formed of a siliceous sand impregnated with oxide of iron (Fuchs and De Launay) ; on an average they contain about 500 grammes of silver to the ton (De Launay), *syn. cascajos* (4) ; P. F. Chalon divides the silver ores of Span. Am. into two classes :

**PACOS**.—Minerais de *plata blanca*, galènes, cuivre gris, pyrites et limonites. Minerais *calidos*, chlorures, bromures, iodures et antimoniures.

**PAVONADOS**.—Minerais *fríos*. Sulfures et rosiclors.

In certain districts of Peru *paco* occurs in limestone, and is rich in oxide of iron and silver, mixed with raw sulphide low in silver it fluxes the ore and furnishes silver for the matte (R. T. Mason) ; *see colorados* (1), *comp. bronces* (6), *fríos* (4), *mulatos* (1) and (2), *pavonados*, *pecos* ; *pacos y cascajos*, Cerro de Pasco, Peru, general name given to the siliceous, ferruginous and argentiferous mass of rocks having a detritic aspect ; (2) Chile, silver ores in which chlorides predominate, forming a gray and ochreous earth, *see u. cálido, da, colorados* (1).

- PADRASTAL**, a sterile vein which crosses another (Moncada), *see* *cruzante*.
- PADRE DEL SAL**, *see u. madre* (2).
- PAGA**, payment, fee, salary ; wages, pay, *see* *jornada* (2), *jornal* (2), *comp. merced*.
- PAILA**, (1) large pan ; *p. de amalgamación*, amalgamating pan ; *p. de espurgue*, clean-up pan, *see* *tina* (2) ; (2) boiler, *see u. altar*, *caldera* (2).
- PAJA** (straw), (1) *p. con pólvora*, blast. match, *see* *mecha* (1) ; (2) *S. Am.* leaves of various palm-trees, used for thatching purposes ; (3) *p. de agua*, *Ant. Col.* hydr. water that will pass an orifice in a thin plate of 12 líneas (23·22 mm.) diameter, under a pressure, at the centre, of 24 líneas (46·44 mm.), equiv. to 21·964 cb.m. per 24 hours ; in *Medellin* = 19·20 cb.m. per 24 hours (*A. J. Duque*) ; (4) *paja-quemada*, *Potosí, Bol.* plumosite or a capillary var. of jamesonite, resembling fine burnt straw. It occurs in vugs, and is argentiferous, giving as much as 0·6 per cent. silver, although generally much poorer (*M. Roberts*), *see* *acerado* (4), *plata* (2).
- PAJARO MINERO**, *Venez.* miner-bird ; “some of the natives have a strong belief that the miner-bird is a sure indicator of alluvial gold” (*G. P. Ashmore and C. Seale*).
- PAJUELA**, (1) blast. slow-match, *see* *mecha* (1) ; (2) glittering ore (*Ponce de León*) ; (3) *pajuelas, p. de hierro*, iron scales ; *p. de oro*, grains of gold (*Ponce de León*).
- PALA**, (1) shovel, *syn. Peru, lampa*, equiv. *Port. pá, Minas Geraes, Braz. shaula, Fr. pelle, Ger. Schaufel, comp. azada* ; *p. con mango*, shovel with handle ; *p. de chuzo*, *Mex.* round-pointed shovel (*Dwight*) ; *p. cuadrada*, square-pointed shovel ; *see* *carrana, cortadera [u. cava (2)], creminel, draga (3), paleta (1) and (2)* ; (2) *p. del turbero*, peat- or turf-cutter : *p. grande*, large ditto, *syn. gran p. de orejas* ; *p. grande doble* or *cuadruple*, still larger sizes, *see* *cuchara (3)* ; (3) *palas índicas* (*lit. Indian shovels*), special apparatus for excavating below water, in tubbing shafts (*Gillman*) ; (4) blade (*hoja*) of axe, hatchet, etc.
- PALACRA, PALACRANA**, (1) piece of native gold, nugget, *see* *pepita* ; (2) ingot of pure gold, *see* *lingote*.
- PALADA**, shovelful (*Fr. pelletée*).
- PALANCA**, (1) lever, *see* *alzaprima, báscula (1), espeque (2), mangueta* ; *p. de aguja*, rail. switch-lever ; *p. de balancín*, beam-lever ; *p. de freno*, brake-lever ; *p. de manguito* (2), clutch-lever ; (2) *p. de hierro*, crowbar, *see* *barra (1), barrón* ; (3) horse-beam of a horse-whim or *malacate* (1), *see* *espeque (1)* ; (4) *p. de campana*, hoist. knocker or signalling apparatus in shafts ; (5) *Mex.* toggle of rock-crusher (*Dwight*), *see* *quebrantador* ; (6) *see u. báscula (2)* ; (7) *Col.* timb leg-piece, *see* *peón (4)*.
- PALANQUE**, *Mex.* blast. barring after shots have been fired (*Dwight*).
- PALANQUERO**, (1) driver of stakes, pile-driver ; (2) *palanqueros*, machine-men or men in charge of machinery, *syn. palanquistas, see revisador*



- (2) ; (3) Ant. Col. timberman, *see* **palero** (1) ; (4) man who works the bellows in iron-works (Acad.).
- PALANQUILLA**, *hierro p.*, *see u. hierro* (1).
- PALANQUÍN**, Cartagena, Sp. lever or brake of a hand-jig (Ibran), *see* *riquitrúm*.
- PALANQUISTA**, *see* **palanquero** (2).
- PALASTRO**, plate of iron ; sheet-iron, iron rolled or beaten into sheets (*hierro laminado*).
- PALEADOR**, man who works with the shovel, shoveller, *syn.* **palero** (3) ; coal-trimmer.
- PALEADURO**, **PALEAJE**, shovelling.
- PALEAR**, to shovel, *syn.* **apalear**.
- PALERO**, (1) maker or seller of shovels ; (2) ditcher, drainer ; (3) shoveller ; coal-trimmer, *see* **paleador** ; (4) timberman, *syn.* **ademador** (1), **entibador**, Ant. Col. **palanquero** (3), Astur. Sp. **volante** (5), equiv. Fr. *boiseur*, Ger. *Zimmerhäuer*, *Zimmerling* ; (5) mine carpenter, *see* **ademador** (2).
- PALETA**, (1) small shovel, fire-shovel, *see* **pala** (1) ; (2) vent. vane of a ventilator (*ventilador*) ; (3) bucket or float-board of a water-wheel, *syn.* **alabe** (1), **voladera**, *see* **cubeta** (3) ; (4) Alicante, Sp. (salt-works), kind of hook [**gancho** (1)] for breaking up and lifting the thin layers of precipitated salt (Molina), *see* **gleba**, **volvedor** ; (5) mech. catch, cam, wiper (Ponce de León), *see* **cama** (3) ; (6) mas. trowel, *see* **trulla**.
- PALETADA**, trowelful of mortar, *see* **paleta** (6).
- PALLACO**, Peru, a piece of ore of good quality found on the waste-heaps [*desechos* (3)] sometimes left at the mouth of an abandoned mine (Guim), *see* **rebotalleros**.
- PALLADOR**, Peru, ore-sorter, as distinguished from the **chancador**.
- PALLAQUEAR**, **PALLAR**, Peru, to sort or pick **pallacos** from the dumps, *see* **rebotalleros**.
- PALLÓN**, (1) assay. button of gold or silver in cupellation, assay-button ; (2) assay of gold when incorporated with the silver after cupellation, and before parting with nitric acid (Acad.).
- PALMO**, palm, handbreadth, one-quarter of a Spanish yard or **vara** (1).
- PALO**, (Port. **páo**), (1) stick, pole, *see* **tocho** (1) ; (2) timber (*madera*) ; Zac. Mex. any timber used in a mine, whether round or rectangular ; **p. lancero**, *see u. llave* (14) ; **palos labrados**, hewn timber ; **palos redondos**, round timber ; (3) **p. hierro**, Sonora, Mex. small tree of hard wood, used in mines ; (4) timb. single prop, *see* **mono** (2) ; (5) **piedra palo**, La Serena, Chile, asbestos—this mineral, together with calcite, is the principal gangue of a copper lode—it is regarded as a good indication.
- PALUSTRE**, mas. trowel, *see* **trulla**.
- PAMPA**, (1) S. Am. an extensive plain, covered with grass, *see* **llano** ; Peru, elevated plain occupying the base of mountains, *comp.* **jalca** ; (2) Phil. a tree, the wood of which is used for making chests, etc. (Velázquez).

**PAN** (from Engl.), pan, *see* **tina** (2).

**PANAL DE ROSA** (rose honeycomb), Amazonas, Peru, quartz, more or less intersected with fissures, and, in places, containing gold in visible quantity ; it is of far less value than **nusco**, as being more difficult to extract and harder to crush (Sir C. Mansfield), *see* **oro**, *comp.* **hígado** (1).

**PAÑAR**, Ant. Col. alluv. m. to collect in the **cachos** (2), or curved wooden diggers, the sands destined for the ground-sluice [**canalón** (2)], and to deposit them in the **bateas** (Uribe).

**PANELLA**, Minas Geraes, Braz. miners' term for druse, *see* **drusa**.

**PANINO**, (1) Mex. country-rock, country, formation or ground, *syn.*

Chile, **panizo** (3), *see* **roca** (4) ; classified by Mexicans into : (a) **p. muy blando**, very soft rock, (b) **p. blando**, soft rock which can be won by pick, bar and wedge, but which requires to be timbered, (c) **p. favorable**, ordinary ground which can be won by drilling, (d) **p. macizo**, hard rock ; (e) **p. muy macizo**, the hardest rock met with in mining—the above corresponds, more or less, to the classification of the Spaniards, *see* **masa** (7) ; **p. cenizo**, Guadalcázar, S. L. Pot. Mex. occurs in stringers or pipes, is soft and sandy, resembling bone-ash somewhat moistened and gently pressed together without drying. The direction of the stringers is most erratic at first sight, but appears to be connected in some way with a complicated system of fissures ; [the ore] bodies (cinnabar, etc.) are always closely connected with these stringers of **panino** (H. F. Collins), *see* **mercurio** (2). (2) Matrix or gangue, *see* **matriz** (1).

**PANIZO**, (1) Hualgáyoc, Peru, felspathic gangue [**matriz** (1)] *comp.* **guijo** ; Pataz, Peru, a whitish felspar rock, or kind of kaolin, with occasional veins of talcose clay, with which gold is sometimes associated (Sir C. Mansfield), *see* **oro** ; (2) Hualgáyoc, Peru, trachyte "country" (Raimondi) ; Chile, "country," *see* **panino** (1) ; **p. verde**, Chañarcillo, sheets of melaphyre and diabase which are intercalated in limestones, *see* **chorro** (3) ; **p. ahuesado** or **ahumado**, name given to a similar sheet, which is 100 m. thick, and which separates the second from the third silver zone.

**PAÑO** (cloth, any woven stuff), **p. de cabecera**, or **de la mesa**, Ant. Col. baize (**bayeta**) or the upper part of a blanket-table, top blanket ; **paños**, blankets, blanketing.

**PANTALLA**, lamp-shade ; screen for the light of a candle or lamp, reflector, *syn.* **reverbero** (1).

**PANTANO**, (1) swamp (Peru, **atolladero**), morass, pool of stagnant water, fen, moor, *see* **balsar**, **ciénega** (1), **humedal** (1), **marjal**, **menucos**, **templaderas** (2), **tremedal**, **turbera**, *comp.* **oconal** ; (2) reservoir or lake for the purpose of irrigation (Velázquez).

**PANTANOSO**, SA, adj. marshy, fenny, boggy.

**PÁO**, Port. stick ; piece of timber, wood (Span. **palo**) ; **p. da rainho**, Braz. Brazil-wood (*Cæsalpinia brasiliensis*), very hard and heavy, yields a fine red dye and takes a beautiful polish.

**PAPA**, (1) nugget of gold or silver, *see pepita*, *comp. reventón* (2); (2) nodule of mineral, *see nódulo* (1); **papas**, Salinas Grandes (salt-marshes) of Arg. nodules of ulexite, generally about the size of a man's fist (H. Buttgenbach); *see u. caliche* (1).

**PAPAGAYO** (parrot), *see u. escalera* (1).

**PAPEL** (paper), **p. cañuela**, blast. special kind of paper used for a "match" or "fuse," *see mecha* (1); for *hoja de p.*, *see hoyo* (2).

**PAR**, (pair), (1) **pares**, b. constr. end or outside rafters of a roof, *comp. cabrios*; (2) two struts [*riostros* (1)] strengthening an upright post, *see Fig. 58*.

**PARA**, Mex. leather apron worn by miners (Venator), *see vestido*.

**PARACAÍDAS** (parachute), (1) hoist. safety-appliances for bringing the cage quickly to rest in case of fracture of rope, *see u. cerrojo*, *garra*, *jaula* (2), *comp. llave* (7); (2) pump. catch, *see cuerno* (2); (3) bor. parachute, fixed to boring-rod, to prevent the velocity of the fall in case of breakage.



FIG. 58.

Un par (de riostros).

**PARADA**, (1) relay or change of mules or horses, *syn. remuda*; (2) Mex. relief or change of men, *see relevo*; (3) Mex. a gang or crew; **una parada** may consist of four men = Cornw. a *pare*, *syn. Guan. una herramienta*; **paradas á destajo**, *see destajo*; **paradas á la carga**, a *pare* paid by the load (12 to 14 arrobas) of ore won, its assay value being taken into account; **paradas á partido**, *see partido* (3); **paradas de busca**, a *pare* paid a certain proportion of ore which they extract, tributers; **paradas de hacienda** or **de obra**, a *pare* working by day; **paradas rayadas**, a *pare* (generally two) paid by the day of eight hours; *see cabecera* (6), *u. cuadrilla* (1), *pareja*, *partido* (3), *punta* (6), *u. rescate* (1), *tandá* (3), *comp. destajo*; (4) dam (*presa* (1)), bank; (5) **sistema de paradas**, Chile, old method of obtaining nitrate of soda by evaporating *caliche* (1) in an iron cauldron [*fondo* (1)], *see ripio* (8), *comp. cachuchas*.

**PARADERA**, (1) sluice, flood-gate, *see compuerta* (2); (2) *u. haul.* a long and thick pointed or forked bar, known as the backstay, attached to wagons in automatic inclined planes, to prevent the car running away in case of breakage, *syn. tentemozo* (2); (3) hoist. rope used for tying up one handle of the windlass.

**PARADERO** (halting-place), rail. station, *depôt*, *see estación* (2).

**PARAFUSO**, Port. screw [*roscas* (1)]; bolt (*cerrajo*).

**PARAL**, (1) scaffolding-pole, *syn. p. de andamio*; carp. standard, prop. stay; (2) **parales**, Ant. Col. timb. leg-pieces [*see peón* (4)] or uprights.

**PARAMENTO**, (1) mas. face of a hewn stone, *see cara* (5); (2) face of a wall, of a dam, etc.; (3) lining of a blast-furnace, *see revestimiento* (2).

**PARAMERA**, region or vast extent of territory where **páramos** abound (Acad.).



**PARAMILLA**, Chile, low range of mountains, *comp.* cordillera.

**PÁRAMO**, flat, elevated and desert country, open to all winds, without cultivation and inhabitants (Acad.), *syn.* Peru, Bol. **puna**, *see* **jalea**, *comp.* llano.

**PARAPETO**, breastwork, *see* **pretil**, *u.* **trincho** (1).

**PARAR**, to stop ; **p. la batería** or **el molino**, to stop the battery or mill, *comp.* **colgar** (4).

**PARARRAYO**, **PARARRAYOS**, lightning-rod or conductor.

**PARCHE**, geol. patch of rock (Gamba).

**PARCIONERO**, partner in a business ; Mex. partner in mines, or in a mining contract.

**PARDO**, **DA**, adj. of the colour of the earth, intermediate between black and white, and with a yellowish red tint, darker than grey (Acad.) ; **pardo blanquizco**, silver-grey ; for **plata parda**, *see* *u.* **plata** (2).

**PARDO**, Mex. oxidised or surface ore (Dwight), *see* **colorados**.

**PARED**, (1) wall of stone, brick, etc. *syn.* **muro** (1) ; **p. medianera**, party-wall, *see* **tabique** (1) ; (2) wall or side of a level, drift or shaft, *see* **costado** ; (3) side or wall of a vein or bed, *see* **hastial** (1), **respaldo** ; (4) Col. sides of earth, very compact and resisting, in excavations of Indian graves or **guacas**.

**PAREDERO**, waller (Ponce de León).

**PAREJA**, pair, couple ; pare of men, *see* **cuarteo** (2), **parada** (3).

**PARIHUELA**, hand-barrow, *see* **carreta** (2), **carro** (4) ; (2) litter or stretcher, *see* **camilla**.

**PARRAGÓN**, assay. standard silver, *see* *u.* **burilada**.

**PARRILLA**, (1) grate of a furnace, *see* **rejilla** (3) ; (2) **parrillas** (gridiron), mech. prep. sizing-bars or grizzly, *see* *u.* **criba**, *u.* **grella**, **reja** (1), **rejilla** (1), *u.* **tamiz**, **zaranda** (2).

**PARTIDANOS**, Cartagena, Sp. men who work manganiferous iron ore by opencast, or by a number of shallow shafts, to a depth of 20 m. only (Fuchs and Delaunay).

**PARTIDO**, (1) district [**distrito** (1)] of a province, *see* **provincia** ; (2) Mex. division of ore, (a) among partners (**socios**), (b) by **barreteros** of whatever they get over and above the **tequio** (2), which is the portion they have to deliver in so many hours, *see* **rescate** (3) ; (3) Mex. portion of ore (a) paid *by* the miners to the owner of the adit or of the **desagüe general** for taking out waste (**desmontes**), ores and for pumping (Gamboa), (b) paid *to* the miners ; in Pachuca the tutworkmen are paid one-eighth of best ore (**primera**) which they sort out underground, over and above the contract price, or tributers are paid one-eighth of all ore which they sort out, besides \$0.50 per day, and each pare of two **barreteros** is allowed two **peons** paid by the mine, with necessary candles. The "avío" of the **barreteros** is for their own account, but materials, as lime, **mocheta**, etc., iron-work and necessary tools are provided by the mine (Bol. de I. G. de M.), *see* **campo** (2), **huachacas**, **machote** (1), *u.* **parada** (3), *comp.* **cuarteo** (3) ; (4) Pachuca, Mex. timb.

dividing-pieces built up of *cuartones* (1) one on top of the other so as to form a solid division isolating the compartment, *see* *atravesada* (2).

**PARTIDOR**, (1) *see u. taller* ; (2) ore-sorter, *see* *apartador* (1).

**PASADOR**, pin or bolt, *see* *cerrojo*, *clavija* (1), *perno* (3) ; *p. con clavija*, collar-pin, cotter-pin ; *p. de articulación*, wrist-plate of Corliss valves (Fr. *planche d'oscillation*,) ; *p. de chaveta*, key-bolt or cotter-bolt, *see* *chaveta* ; *p. del enganche*, rail. coupling-pin ; *p. de tornillo*, screw-bolt.

**PASAJERO**, *see u. prestado*, *da.*

**PASAMANO**, (1) balustrade or railing, *see* *baranda* ; rail. hand-rail ; (2) *pasamanos*, a rope used by men to assist them in walking up and down inclined galleries or shafts provided with steps (Molina) ; (3) Zac. Mex. timb. divider or dividing-piece, *see* *atravesada* (2) ; (4) Potosí, Bol. native silver in a wiry interlaced form ; when found it curiously enough is considered a bad omen, as experience appears to have taught that it is a sure sign of the lode becoming poor (M. Roberts), *see* *plata* (2).

**PASEO** (walk), *p. de tierras*, S. Sp. transport on the backs of men, etc. (transporte á hombros) ; a man can carry 15 to 25 kg. at a speed of 31 to 63 cm. per second (Gillman), *see* *gavia*.

**PASILLA**, Mex. in the *patio* process, silver amalgam pressed into a dry mass, or in a dry condition, "una liz [lis] lima, cuando restregándola con el pulgar contra las paredes de la jícara abandona pella seca 'pasilla' " (Bol. del I. G. de M.), *syn. copos* (2), *see* *amalgama*, *comp. copella*, *pella* (2).

**PASILLO** (small, narrow passage), c.m. thirl, thurling, bolt-hole, cut-through, (S. Wales) cross-hole, a short cross-cut between two parallel roadways or headings for ventilation, or for winning the coal, *see* *galería* (1).

**PASO**, (1) step or rung of a ladder [*escala* (1)], *see* *escalón* (1) ; (2) ore-pass or -shoot (U.S.A. ore-chute or -slide), *syn. Pachuca*, Mex. *alcancía*, Sinaloa, Mex. *caimán* (1), *cajón* (15), Mex. *chorreadero*, Ant. Col. *coladero* (2), *pocillo* (4), *resbaladero*, Ant. Col. *rumbadero* or *rumbón* (2), *tolva* (2), equiv. Fr. *cheminée*, *puits de chute*, Ger. *Rolle*, *Rollloch*, *see* *cormano*, *trampilla*, *vertederas* ; (3) mech. passage or way ; *p. de hombre*, manhole ; *p. á nivel*, rail. level-crossing ; (4) top. pass (between mountains), *syn. cortadura* (1), *puerto* (2), *see* *angostura* (2), *boquete* (1), *callejón* (2), *derrumbo* (2), *desfiladero*, *escobio*, *estrecho* (2), *garganta* (4), *portezuela*, *quebrada* (2) ; pass of a river, ford ; (5) any underground passage, drift or gallery ; *p. real*, main road or gallery, *see* *galería* (1) ; (6) mech. pitch of the tooth of a wheel ; *p. de un tornillo*, pitch of a screw.

**PASTA** (paste), (1) Mex. argentiferous ores, as blende, galena, etc., but not of high grade, *see* *plata* (2) ; (2) Ozamatlan, Mich. Mex. argenticite, *see* *plata* (2) ; (3) Guerr. Mex. and Chile, grey copper ore or tetrahedrite (*cobre gris*), rich in silver, *see* *plata* (2) ; (4) Zacualpan, Mex. silver-bearing iron pyrites, *see* *plata* (2) ; (5) Sinaloa, Mex. metallic

coating on rock, generally silver ore; *p. china*, in rounded pieces, *p. morada*, purple ditto, *p. mantecosa*, lead-coloured ditto, are not considered good by the miners, whereas *p. negra* is liked by them, *see plata* (2); (6) bullion or uncoined silver; *p. mixta*, silver bullion, for *plata p.*, *see u. plata* (1); (7) Mex. amalgam of gold or silver (Dwight), *see amalgama*.

**PASTORES**, two pieces of wood for uniting and strengthening the horizontal supports of a windlass, *see* Fig. 59, *see torno* (2); lower horizontal ties of the pulley-frame of a mule-whim, *comp. crucero* (10).

**PASTOSO, SA**, adj. metal *pastoso*, Mex. bournonite (Guillemin-Tarayre) or wheel-ore, equiv. Ger *Schwarzspiesglanzerz*.

**PASTOSOS**, Asientos, Aguascalientes, Mex. copper ores in which the matrix of quartz, calcite or fluor spar is scarce, *syn. blandos*, *comp. duros*, *lamosos* (1), *yesosos*, *see cobre* (2).

**PATA**, (1) *patas*, legs of the frame [*mesa* (4)] of a windlass, *see torno* (2); legs of the frame supporting the axle of a water-wheel, etc.; (2) *p. de cabra*, crowbar, nail-puller, *see arrancaclavos*; (3) *p. de liebre*, *see u. corazón* (2).

**PATENTE**, Chile, annual tax on mines, amounting to \$10 (Chilian) per ann. per hectare, *see derecho* (2), *impuesto*.

**PATILLA**, (1) Mex. movable platform or cradle, *see descanso* (4); (2) *pozos y patillas*, *see u. pozo* (3).

**PATILLO**, Col. timb. joint between cap and leg, *see* Fig. 60, it is a var. of that known as *ajuste á la húngara*, *see* Fig. 48.

**PATÍN** (skate), (1) *patines*, runners of a sledge, *see rastra* (1); (2) *patines*, pump. wings or catches attached to the spear-rod [*tirante* (1) *maestro*]; (3) *carril de p.*, flat-bottom rail, *see u. carril* (3) and remarks *u. seta*.

**PATÍO**, Mex. a square or rectangular piece of white linen, used by the miners; it is doubled diagonally, and the ends are tied round the neck or hips (Ramirez), *see vestido*.

**PATIO**, (1) yard, court or floor; *p. de amalgamación*, amalgamation court or floors, *syn. galera* (3) *de amalgamación*, *see echadero*, *galera* (1), *incorporadero*, *comp. cerco* (4); (2) *beneficio de p.*, cold amalgamation process or American heap-amalgamation, *syn. amalgamación en frío*. It was invented by Bartolomé de Medina, of Pachuca, Mex.

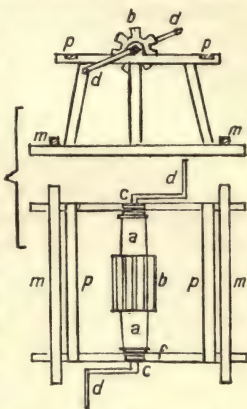


FIG. 59.—Pastores (after Moncada).

*a*, arbol (2), cilindra (2) or niza (4); *b*, costillas (5) or lagging; *cc*, cojinetes or "chumaceras"; *dd*, ciguenas; *ff*, sombrero; *mm*, muertos; *pp*, pastores.



FIG. 60.—Patillo.



in 1557, introduced into Peru in 1574. In 1793 mules and horses were first used in the process, saving 75 per cent. in labour cost. *See* achúa, ácido (2), activar, alacrán (1), apurador (2), apuradora (2), apuro, asiento (3), aturdir, bajo (2), baño (1), banquillos (1), *u.* barra (3), *u.* batea, boliche (1), bollos (1), borracho (2), cabecilla (2), caer de cruz, calentar, calentura, calor de frío, camón (4), canal (1), capellina, caperuza (1), capote (1), cárcamo (1), casa de fundición (*u.* casa), cebachores, cebo (3), ceja (1), chorrear, *u.* cola (8), colpa (1), consumido, contraraspas, copella, copos (1), caza, cuchara (1), cuerpo (1) and (2), curtido (2), curtir, descanso (5), desecho (1), empellar, empleo, encadene, enfriar, ensalmar, ensalmor, *u.* ensayador, *u.* estanque (3), estrujón, *u.* estufa, frío (1), fríos, fuerte, gamuza, granza (1), guía (8), hijuela (2), hormiguillar, hormiguillo (2), incorporar, incorporo, *u.* jales, jalsontles, jantilla, ladrillera (2), lama (2), lamero (1) and (2), lamoso (2), lavadero (3), lave, lengua, (5), limadura (3) and (4), lis, lista, llapar, maestro (3), magistral, manga (2), maquila (2), marmaja (2), mayordomo, noque (2), pasilla, pella, pelo (4), pérdida, pila (1) and (2), piña (1) and (2), piquete (4), pir, *u.* planilla (1), platillo (1), polvillos (3), precipitado, puruña (2), quema (1), quesos, raspa (2), *u.* relave, rendida, rendir, repasadores, repasar, repaso, reposadero (4), reposar, rescate, rosca (3) and (4), saltierra [*u.* sal (1)], sangrar (2), *u.* seco, ca, suadero, tajadera (3), tapaojos, techichil, templador, tentadura (1), tentadurero, tepestate, tina (2), *u.* tocado, da, torta (1), traspaleo, voltear; metales de p., *see* negros; plata de p., *see u.* plata (1); (3) trabajar por p., Ant. Col. to quarry or make an open cut, *see* tajo (3). PATRÓN, (1) overman, *see* sobrestante; (2) design, pattern, templet, *see* plantilla (1).

PATRONA, *see u.* sobrestante.

PAULISTAS, Minas Geraes, Braz. natives of São Paulo, who first discovered alluvial gold in the neighbourhood of that city (H. K. Scott).

PAUSA (rest), Guan. Mex. timb. prop, single prop, *see* mono (2).

PAVA, (1) met. large bellows, generally double; (2) S. Sp. blast-furnace, *syn.* horno (2) de p.

PAVONADO, (1) Peru, tetrahedrite, or cobre gris, frequently highly argentiferous, *see* plata (2); sometimes = tennantite or enargite; p. fino = malinowskite (Raimondi); (2) pavonados, Peru, rich zone, below the bronces (3 d), composed principally of sulphides and sulpho-antimonates of silver, and yielding 8 to 9 kg. of silver to the ton (De Launay), *see* negrilla (1), *u.* pacos, plata (2).

PEAJE, PEDAJE, bridge-toll, ferriage.

PEAJERO, toll-gatherer.

PECA, *see* mancha.

PECE, clay wetted for making mud walls (tapias).

PECES, *see* pez (3).

PECHERA, Mex. leather or cloth worn by labourer packing ore, to protect neck and back (Dwight), *see* vestido.

**PECHO**, (1) met. front wall of a shaft-furnace, *see* cuba (4); (2) **barreno** (1) de p., blast. horizontal drill-hole; (3) **p. de paloma**, Peru, phillipsite (Raimondi), *see* **polvorilla** (2).

**PEDAJE**, *see* **peaje**.

**PEDAL**, sort of lever for actuating a valve.

**PEDERNAL**, (1) flint, a massive compact var. of quartz (**cuarzo**), *syn.* **pedra de candela**, de chispa, de escopeta, de fusil, de lumbre or de mobre, (Aztec) **tecpatl** (in part); hornstone [**corneo** (1)] or chert; (2) **pedernales**, Peru, silver ores formed of siliceous sand impregnated with oxide of iron, *see* **u. pacos** (1).

**PEDESTAL**, mech. plummer-block, pedestal, shaft-bearer, *see* **chumacera**.

**PEDIMENTO**, petition; Chile, written petition for piece of mining ground to public notary, *comp.* **denuncio**, **solicitud**.

**PEDRA**, Port. stone; **p. de cantaria**, freestone, *syn.* **pedraria**; **p. de cevar**, loadstone; **p. de corno**, hornstone; **p. huma de rocha**, rock-alum; **p. pomes**, pumice-stone; **p. de ferro**, Braz. ironstone or quartz of itabirite replaced by oxide of iron, forming a very pure iron ore; **p. dos lages**, Minas Geraes, Braz. flagstone of schistose quartzite used for building purposes (H. K. Scott).

**PEDREGAL**, place full of stones, *syn.* **pedriza** (2), *see* **canchal**, **cantizal**, *comp.* **cascajal**, **guijarral**.

**PEDRERA**, (Port. **pedreira**), quarry, stone-pit, *see* **cantera** (1).

**PEDRERO** (Port. **pedreiro**), stone-cutter, *syn.* **cantero** (1).

**PEDRICERO**, Sierra de Cartagena, Sp. mason who constructs dry walls [**pedrizas** (3)], *see* **alarife** (2), **albañil** (1).

**PEDRIZA**, (1) quarry, *see* **cantera** (1); (2) *see* **pedregal**; (3) Sierra de Cartagena, Sp. dry wall [**muro** (1) en seco] or dry arch [**bóveda** (3) en seco], *see* **pedricero**.

**PEGA**, act of firing a blast, *see* **pegar**.

**PEGADOR**, blast. man who fires the match; blaster, or man who loads and fires the blast-hole.

**PEGADURA**, (1) pitching, daubing with pitch; (2) **metal en pegaduras**, massive ore, *see* **u. acerado** (1), **u. rasposo**; (3) **pegaduras**, stickings—in old mines ore sticking to or coating the walls; (4) met. “scaffold,” *see* **morro** (2).

**PEGAR**, **p. el barreno** (1), to fire a blast-hole, *see* **tirar**.

**PEINE** (comb), S. Sp. mech. prep. the inclined grating or screen at the head of the distributor of a **mesa** (1) de arroyo.

**PELADILLA**, small pebble, generally white (quartz), *see* **guijarro** (1).

**PELDAÑO**, step of a staircase [**escalera** (1)]; rung of a ladder, *see* **escalón** (1), **u. escalera** (2).

**PELLA**, (1) mass of metal in its crude state, *comp.* **piña** (2); (2) Mex. amalgam left after the mercury has been squeezed out, *syn.* **pelleta**, **piña** (1), *see* **u. incorporo**, *comp.* **pasilla**; **beneficio de p. de plata**, *see* **u. beneficio**; **plata pella**, silver amalgam; **p. natural**, native amalgam.

**PELLETA**, *see* **pella** (2).

**PELO**, (1) opaque streak in gems, etc. ; (2) split in metals ; (3) grain of wood ; (4) **cueros al p.**, *see* **u. cuero** (1) ; (5) Mex. in the **patio** process, the surface of the ore-mud (**torta**), *comp.* **suadero** ; (6) **p. de veta**, Chile, stringer or mere joint-plane.

**PEÑA** (Port. **penha**), (1) large stone or rock, unworked, in its natural form and state ; **p. desprendida**, geol. boulder, *see* **guijarro** (1) ; **p. viva**, stone not yet quarried, *see* **puerta** (5) ; (2) *see* **peñasco** ; (3) largest sledge-hammer used in a smithy (Guim), *see* **martillo** ; (4) Col. alluv. m. bed-rock or bottom, *see* **roca** (6) ; **p. hervida**, **picadora** or **caladora**, fissured and porous bed-rock, which has allowed gold to enter the cracks and interstices ; **p. mora**, carmine-coloured bed-rock with white and black spots ; **p. subidora**, soft, almost liquefied and elastic bed-rock (Uribe), *see* **ir á peña** ; (5) Col. vein m. "country," country-rock, *see* **roca** (4) ; for **p. boba**, *see* **carrancho** (2) ; for **p. churumbela**, *see* **churumbela** ; **p. sarabiada**, gneiss ; (6) **p. falsa**, alluv. m. false bed-rock or bottom, fragments of ordinary bed-rock [**peña** (4)], found between two layers of pay-dirt, *syn.* **p. tapa**, *see* **roca** (7).

**PEÑADO**, *see* **peñasco**.

**PEÑASCAL**, rocky hill or mountain, *see* **cerro** (1), **peñon** (2).

**PEÑASCO**, (Port. **penhasco**), a large rock ; a bare rock, without vegetation, of very precipitous form and visible from a long distance ; an escarpment of rock, *syn.* **peña** (2), **peñado**, **peñol**, **peñón** (1), *see* **cancho**, **jorfe** (2), **risco** (1), **roca** (1), **teotines**, **tormo**, **torre-torre**. NOTE.—If double = **tetilla**.

**PENDIENTE**, (1) top. slope or declivity, *syn.* **declive** (1), **derrame**, **flanco**, **inclinación** (2), **ladera** (1), **recuesto** (1), **repecho**, equiv. Port. **encosta** (1), Fr. **pente**, **penchant**, Ger. **Abschussigkeit**, **Abhang**, *see* **escarpe** (1). **u. resbalo**, *comp.* **loma** (2) ; mech. inclination, slope or steepness (of an inclined plane) ; **p. límite á la rodadura**, **p. límite al resbalamiento**. **p. de equilibrio**, **p. de igual resistencia**, limiting slope (or angle) or rolling, of sliding, slope (or angle) of repose, slope (or angle) of equal resistance, respectively ; (2) transp. grade, gradient, *syn.* **cuesta** (2), **declive** (2), **desnivel**, **inclinación** (3) ; (3) geol. dip, *see* **echado** ; (4) hanging wall or roof, *see* **alta** (1).

**PENDÓN**, reins of the leading mule, *see* **u. guía** (7).

**PENDOR**, Port. dip, *see* **echado**.

**PENITENTES**, pénitents of the French, or men formerly employed to explode fire-damp in a mine ; they were clothed in leather, and had a hood of the same material (hence name).

**PEÑOL**, a large rock, *see* **peñasco**.

**PEÑON**, (1) a large rock, *see* **peñasco** ; (2) rocky mountain, *see* **peñascal** ; (3) Huelva, Sp. a mixture of quartz, jasper, etc., which always contains a considerable quantity of iron pyrites, found in manganese deposits.

**PEÓN**, (1) native labourer or assistant, day-labourer, common labourer *see* **trabajador** ; **p. de albañil**, hodman : **p. suelto** (U.S.A.) roustabout



(Dwight) ; (2) mech. journal, *see* **luchadero** ; (3) Mex. movable vertical post of an **arrastre** (3) [*syn.* Col. **perpendicular** (2)], of a Chilian mill (*see u.* **espada**), **noria** (2), etc. ; (4) timb. leg-piece, leg, *syn.* **columna** (2), **derecho** (3), **entibo** (2), **montante** (3), Col. **palanca** (7), **paral** (2), **pie** (5) **derecho**, **puntal** (2), **taco** (7), equiv. Fr. **montant**, Ger. **Bein** ; (5) timb. single prop or prop, *see* **mono** (2) ; a stull-piece (**estemple**) placed vertically (**Ezquerria**).

**PEONADA**, day-work of a labourer, *see u.* **colero** (1).

**PEONAJE**, total number of **peons** working in a mine, etc., gang.

**PEPA**, Chile, nugget, *see* **pepita**.

**PEPE** (pet name for José), Mex. the boy who lights the **barretero** so that he can work, and who assists him at his work in certain hours, *see* **abajador** (1), *comp.* **zorra**.

**PEPENA**, Mex. (1) rich ore (**metal rico**) in some parts of the Republic, and smelting ore (**metal de fuego**) in others (**Ramirez**) ; **media p.**, medium rich ore ; **pepenas**, leady silver ores in the state of sulphides (*comp.* **cuajados**) ; **Huitzucó**, Guerr. best mercury ore, containing 10 to 12 per cent. of metal, *comp. u.* **despoblado**, **da**, **granza** (1) and **tierras** (4) ; (2) picked ore, *syn.* **limpio**, **metal** (3) **hecha** ; (3) the act of picking, sorting or cobbing, *see* **apartado** (1) ; **tosca p.**, coarse picking ; (4) **patio de p.**, cobbing-floors.

**PEPENADO**, Mex. cleaned or cobbed ore.

**PEPENADOR**, Mex. cobber, sorter, *see* **apartador** (1).

**PEPENADORAS**, Guan. and Real del Monte, Mex. women who pick out the rich pieces of ore, ore-sorters, *see* **apartador**, *comp.* **separadoras**.

**PEPENAR**, Mex. to cob, to sort, *see* **apartar** (1).

**PEPERITA**, volcanic sand or **peperino**, *comp.* **puzol**.

**PEPITA**, nugget, usually of gold, but may be of silver or platinum, *syn.* Col. **chicharón**, **chispa** (3), Venez. **cochano**, Mex. **gallo** (5), Peru, **papa** (1), Chile, **pepa**, **rodado** (2), equiv. Fr. **pepite d'or**, Ger. **Goldklumpen**, *comp.* **abortos de oro**, **alutación**, **caldeirão**, **choclo de oro**, **cíncel** (3), *u.* **grano** (1), **palacra** (1).

**PERDERSE**, *see* **se pierde**.

**PÉRDIDA**, loss ; in the **patio** process, a loss of mercury besides the **consumido**, a mechanical loss, *see u.* **lis** ; **p. de propiedad minera**, *see* **caducidad**.

**PERDIDO**, **DA**, pp. of **perder**, lost, for **piedra perdida**, *see* **fundamental** (1) ; for **vapor perdido**, *see u.* **vapor** (1).

**PERFIL**, profile, side-view, side-elevation (of a machine, etc.).

**PERFORACIÓN**, perforation ; **p. de pozo** (1), well-boring ; **p. de un tunel**, tunnelling.

**PERFORADOR**, **PERFORADORA**, rock-drill, *syn.* **máquina de barrenar**, or **de taladro**, **p. de roca**, *see* **bastidor** (1), **cortadora**, *comp.* **socavadora**.

**PERFORAR**, to bore a deep borehole, *see* **barrenar** (1), *comp.* **excavar** ; **p. un tunel**, to tunnel ; **máquina de p.**, drilling-machine.

**PERITO**, (1) Span. Am. scientific or practical arbitrator or expert ; in Mex. must be a graduate, or, at least, practical ; the **peritos** measure the claims, etc. ; (2) valuer, appraiser ; (3) a skilful workman.

**PERLA** (pearl), (1) **p. espato**, pearl-spar ; (2) Mex. assay-bead (Dwight).

**PERNETE**, pin, gudgeon, *see* **árbol** (3).

**PERNO** (pin), (1) large nail or spike, *see* **clavazón** (2), **clavo** (1), **espiga** (1) ; (2) bolt, *see* **cerrojo** ; (3) mech. joint-pin, crank-pin, *see* **clavija** (1), **pasador**.

**PEROL**, Ant. Col. small iron pan in which some sort of pestle works, used for grinding and amalgamating pyrites, *comp.* **mortero** (3).

**PERPENDICULAR**, (1) Mex. the part of a working-place [labor (2)] below the miner (Gamboa) ; (2) Col. the vertical post of an **arrastre** (3), *see* **peón** (3).

**PERRO**, (1) **p. de mina** = Ger. **Hund**, Fr. **chien de mine**, *comp.* **carro** (2) ; (2) mech. gib, *syn.* **contraclavija** [*see u. clavija* (1)], *see u. chaveta* and **pasador**.

**PERSONAL**, Fr. **personnel**.

**PERTENENCIA**, orig. in Sp. a plot or set of ground 300 × 200 **varas** allotted to the discoverer of a lode, a post was erected at the corner of each **pertenencia**, which had to be kept whitewashed ; in Mex. according to the old **Ordenanzas**, 200 **varas** on the strike of the vein by 112½ to 200 **varas** in width, according to the dip, but now in both countries 1 **pertenencia** of a vein mine = 1 hectare or 100 m. square, in Peru = 2 hectares or 200 m. long by 100 m. wide, in the Arg. = 300 m. × 200 m. to 300 m. according to the dip, in Colombia = 600 m. × 240 m., a vein mine having three of these. In Mexico 1 **pertenencia** of gold-placers and irregular mineral deposits = 300 m. × 300 m. ; in Peru, coal-placers, etc., = 4 hectares ; equiv. Port. (Brazil) **data** (2).

**PESADOR**, weigher of ore, coke, etc., weigh-master.

**PESCANTE**, (1) crane, *see* **grúa** ; (2) **p. de hierro**, pump. set-off, or appliance used in joining pump-rods to main rods, *see* Fig. 61, *comp.* **taco** (9), *u.* **tapajunta**.

**PESO**, (1) weight, gravity ; **p. bruto**, gross weight ; **p. neto**, net weight ; **p. muerto**, dead weight ; (2) balance, scales ; **p. de muelle**, spring balance ; (3) one dollar ; in some countries of S. Am. there are two kinds, the hard dollar, **p. fuerte** or **duro** or **p. de ley**, of 100 cents, and the soft dollar, or **p. sencillo**, of 80 cents ; (4) **p. de oro**, Col. half a **castellano** (2).

**PESTAÑA**, flange of a wheel, *see* **reborde**.

**PESTILLO**, bolt, *see* **cerrojo**.

**PETANQUE**, *see u. petlanque*.

**PETLANQUE**, Mex. **p. acerado**, **encarnado** or **oscuro**, dark ruby silver or **rosicler oscuro**. NOTE.—**P. acerado** in Tlalpujahua = polybasite or

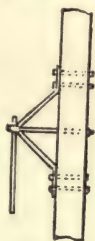


FIG. 61.  
Pescante de hierro.

**plata agria**, while, in Temascaltepec, **p. encarnado** = light ruby silver, and **p. acerado oscuro** = dark ruby silver. **P. colorado** or **rojo**, red arsenical or light ruby silver ore (**nochistle** or **rosicler claro**) ; **p. negro**, argentite. **NOTE**.—**Petlanque** often = argentite, but in Tlalpajahua = pyrrargyrite. **Petlanques** (sometimes spelt **petanques**), high-grade silver ores, as ruby silver, silver glance, brittle silver, etc. ; **apetlancados**, ores rich in **petlanques**, *see* **plata** (2).

**PETO**, *see u. zapapico*.

**PETRÓLEO**, petroleum, *see* **nafta**.

**PEZ**, (1) pitch, tar ; (2) **p. mineral**, asphalt, *see* **asfalto** ; (3) **peces**, Espiel and Belmez, Sp. more or less isolated lenses of coal, *see* **lentejas**.

**PIA**, *see u. poço* (2).

**PIC**, Minas Geraes, Braz. pick, *see* **picarete** (2), **pico** (2).

**PICA** (pike), c.m. a kind of pick [**pico** (1)], used in deep undercutting, equiv. Fr. **rivelaine**, *see* **regadera** (2).

**PICACHO**, top. pointed summit or peak (of a mountain), *see* **pico** (6).

**PICADEIRA**, Port. pickaxe, *see* **azadón** (1).

**PICADO**, Peru, surface opening on a vein, *comp. cata* (4).

**PICADOR**, (1) c.m. holer or undercutter ; (2) Mex. met. man who punches two holes in the top crust of slag in a cast-iron matte or overflow pot or "settler" (O. H. Hahn) ; one who taps a furnace (Dwight) ; (3) **p. de limas**, file-cutter.

**PICADORA**, *see u. peña* (4).

**PICAPORRO**, a kind of pick. *see* **pico** (2).

**PICAPORTE**, spring bolt or latch ; catch-bolt (Ponce de León), *see u. cierre*.

**PICAR**, (1) c.m. to hew ; **pico de p.** hewing-pick ; (2) Mex. met. to tap a furnace for slag or bullion (Dwight) ; (3) **p. un agua**, Ant. Col. to seek the level a ditch should have in order to work any mine (Uribe) ; (4) **p. un hilo**, Ant. Col. to discover or uncover, in any given point, a known vein (Uribe).

**PICARETE**, Port. (1) a sort of hammer ; (2) a pick, *see* **pic**.

**PICIFORME**, for **ulla p.**, *see u. ulla*.

**PICO** (1) pickaxe, *see* **zapapico** ; (2) miner's pick, *syn.* Mex. **guíngaro**, **huíngaro**, equiv. Port. **picarete** (2), Fr. **pic**, Ger. **Keilhaue** ; they are divided into **picos sencillos**, and **picos dobles** ; **p. de cavar**, *see* **piocha** ; **p. de descalzar** (1) or **de socavar**, ordinary pick used in undercutting, *see* **alcotana**, **escota**, **gancho** (5), **pica**, **picaporro**, *u.* **picar** (1), **piqueta** (2), **regadera** (2), **zapapico** ; (3) Mex. sledge-hammer, divided into **picos golpeadores** or **barrenadores** (2), from 8 to 12 lb. in weight, and **picos quebradores**, for breaking up ore, from 3 to 6 lb. in weight, *syn.* **golpe** (1) ; (4) Mex. small hammer used in ore-sorting, *see* **golpe** (2) ; (5) beak iron of an anvil, (**yunque**) ; (6) peak of a mountain, *syn.* **picacho**, **picota** (1), *see* **aguja** (1) ; (7) Phil. a weight of 137½ lb. or 63·262 k. = **picul** ; in Siam the **picul** is 135½ lb., in China 133½ lb. *avoir.*, *see* **cate**, **chinanta**, **tael** (1) ; (8) **á pico**, vertically, *see* **apique** (3), *u.* **vagón**.



**PICOLETE**, staple, *see* cerradero (1).

**PICONADA**, for piedra p. *see u.* piedra.

**PICOTA**, (1) top or peak of a mountain, *see* pico (6); (2) *see* chuzo (4).

**PIE**, (1) the foot or base of a mountain; (2) p. de cabra, claw-ended crowbar, *see* barrón (1); (3) p. de amigo, timb. an inclined strut or prop; p. de gallo, a diagonal brace; (4) p. de mulo, Mex. timb. a kind of joint, *see u.* ajuste (3); (5) p. derecho, timb. leg-piece, *see* peón (4); build. constr. jamb or jamb-post, *see* jamba; (6) p. derecho, timb. single prop, *see* mono (2); (7) p. derecho, standard of a wire ropeway, *see* caballete (5); upright or standard of a pulley-frame, *see* montante (1); (8) pies derechos cortos, *see* pilaretes; (9) trunk of trees, *see* tronco (1); (10) foot, measure of length, in Castile = 27·85 cm. or about 11 inches; (11) metal de p., *see u.* metal (3); plata de p., *see u.* plata (1); por p., Mex. patio process; (12) p. de labor, Algamarca, Cajabamba, Peru, blast. exposing a new face so as to increase the effect of the explosion; it is done by firing lower holes first, and the upper ones afterwards (Santolalla).

**PIEDRA** (Port. pedra), stone, rock or mineral; p. acanterada, Durango, Mex. rhyolite, *see* riolita (1); p. afiladera or aguzadera, *see* p. de afilar; p. alumbre, alum-stone or alunite; p. amoladera, *see* p. de amolar; p. angular, corner-stone; p. aprieta, *see* p. azul (a); p. arcillosa, clay-stone; p. arenosa, freestone; p. azufre, sulphur rock; p. azul (a), Guadalcázar, S. L. Pot. Mex. limestone; Huitzuco, Guerr. Mex. hard and dark grey limestone, *syn.* p. aprieta, (b) Caratal, Venez. hard diorite, next to the veins, sometimes mineralised, and containing a notable quantity of iron pyrites and visible gold (C. Monchot), *see also* cascajo (3), (c) blue vitriol, *see* vitriolo; p. berroqueña, granite; p. bornera, black stone, used for making millstones (Acad.); p. bruta, Mex. (a) country-rock, *see* roca (4), (b) barren rock, *see* borrasca (2); p. calamina, calamine; p. caliza, limestone, *see* p. de cal; p. ciega, hard precious stone, without transparency, as heliotrope, agate, etc.; p. córnea, hornstone, *see u.* córneo, ea (1); p. de acarreo, geol. erratic block (Ponce de León); p. de alumbre, *see* p. alumbre; p. de afilar or de amolar, p. afiladera, p. aguzadera, p. amoladera, grindstone or whetstone, *see* muela (4); p. de barrilla, Tamaulipas, Mex. rock consisting of an oblong nucleus of limestone, covered with an argillaceous crust, more or less thick, making it refractory, it is used in the construction of galemes; p. de cal, chalk or limestone (p. caliza); p. de campana, or p. sonora, clinkstone or phonolite; p. de candela, de chispa, de escopeta or de fusil, flint, *see* pedernal (1); p. de canto, *see* canto (4); p. de churumbela, *see* churumbela; p. de cruz, (a) cross-stone (harmotome), (b) staurolite; p. de cuenta, mas. ashlar; p. de jabón, Mex. talc; p. de labrador, greenstone; p. del águila, eagle-stone, a var. of argillaceous iron ore in nodules; p. de la luna or de la Amazonas, p. del Labrador, labradorite; p. de lumbre, flint, *see* pedernal (1); p. de luna, moonstone, a var. of oligoclase or orthoclase; p. de mano, (a)

see **voladora** (3), (b) Mex. good specimens of ore, sometimes carried by hand and often assigned to pious purposes (M. J. Gloss.); **p. de mobre**, flint, see **pedernal** (1); **p. de moca**, see *u. calcedonia*; **p. de moler** (a) grindstone, (b) Ant. Col. syenite; **p. de molino**, (a) stone-mill, (b) millstone grit; **p. de mollejón**, Ant. Col. sandstone, see **arenisca**; **p. palo**, see **palo** (5); **p. de pipas**, meerschaum (**espuma de mar**); **p. de pulir**, see **tizar**; **p. de remendar**, (a) Guadalcázar, S. L. Pot. Mex. big fragment of granite; (b) San Nicolas, Tamaulipas, Mex. black basaltic rock, (c) Mazapil, Mex. felspathic porphyry; **p. de sillería**, see *u. sillería*; **p. de talla**, freestone, ashlar; **p. de toque**, touchstone (**jaspe negro**), equiv. Port. **cotícula**; **p. de yeso**, gypsum rock; **p. dura**, any hard flint-like stone, as chalcedony, opal, etc.; **p. fétida**, stinkstone; **p. fina**, see **p. preciosa**; **p. frailesca**, see **frailesca**; **p. franca**, any stone easy to work, freestone (**p. arenosa**), see **lage** (1), **lancha** (2); **p. fundamental** or **granigorda**, foundation stone; **p. hematitis**, hematite; **p. hidiondo**, Guadalcázar, S. L. Pot. Mex. blackish and hepatic limestone (H. F. Collins); **p. imán**, loadstone, see **imán** (1); **p. inga**, pyrites; **p. jaspe**, jasper; **p. labrada**, dressed stone; **p. lipis**, blue vitriol (sulphate of copper); **p. litográfica**, lithographic stone, a somewhat argillaceous var. of marble (**mármol**); **p. loca**, meerschaum (**espuma de mar**); **p. maciza**, stone without defects; **p. marmol**, marble; **p. mineral**, ore; **p. mineral de plomo**, plumbago; **p. mora**, Guadalcázar, S. L. Pot. Mex. diorite; **p. nefrítica**, jade; **p. negra**, Venez. greenish grey felstone (Dr. Foster); **p. ollar**, pot-stone, see **ollar**; **p. oniquina**, onyx; **p. palmeada**, stone whose fracture shows striæ like the leaves of a palm (Acad.); **p. perdida**, foundation stone; **p. pez**, pitchstone—retinite, see *u. riolita*; **p. piconada**, stone worked only with a pick; **p. podrida**, rotten stone; **p. pómez**, pumice-stone; **p. preciosa**, or **p. fina**, gem or precious stone; **p. radiante** actinolite (var. of hornblende); **p. ripiada**, rubble-stone; **p. rodada**, any round stone or rock, see **canto rodado**; **p. sarabeada** or **sarabiada**, Ant. Col. miners' term for decomposed gneiss or granite; **piedras conglutinadas**, breccia, see **brecha** (2); **piedras de fondo**, see *u. fondo* (4); **piedras de tope**, mas. capstones; **p. seca**, stone placed without lime or clay; **p. tabaire**, see **tabaire**; **p. tosca**, (a) pumice-stone; (b) unworked stone; **p. viva**, very hard stone; **p. voladora**, round stone used in oil-mills, etc.

**PIEL** (Port. **pelle**), (1) raw hide or pelt, see **cuero** (1); (2) hide, cured and dressed, leather, *syn.* **cuero** (2); **p. de gamuza**, chamois (leather).

**PIERNO** (leg), **piernos**, legs of compas (**compás**), etc.

**PIEZA**, (1) timb. any piece of timber; (2) **p. en H**, Pachuca, Hid. Mex. pump. aitch-piece (**H-piece**); (3) **piezas vivas**, mech. working parts (Ponce de León); for **piezas móviles** and **piezas fijas**, see *u. aguja* (5).

**PILA**, (1) Mex. in the **patio** process, a large stone basin or trough, having a very smooth inner surface, in which the washed amalgam is kept, see Fig. 62, after Tilmann; San Dimas, Dur. hide trough for catching

the mercury which has drained through the **manga** (2) (**Chism**) ; (2) **p. apuradora**, Mex. in the **patio** process, tank to receive the residues from the washing-troughs (**Egleston**), *see* **apuradora** (2), **estanque** (3) ; (3) salt-works, a large vessel for evaporation, large **pilas** are 25 yards by 10 yards, and from one-third to half a yard deep, the water being  $2\frac{1}{2}$  to 4 inches deep, *comp.* **charco** (2) ; (4) **pilas**, met. cemented tanks for the treatment of dust from quicksilver furnaces, *see* **mercurio** (2) ; (5) Col. alluv. m. a pit or reservoir, dug out or made by damming a creek, etc., used in **caliche** (8) or gravel bank washing. The average **pila** will contain 2000 cubic feet of water (**C. Bullman**), *see* **placer**. (6) **P. de mineral**, pile of ore, *see* **montón** (1) ; (7) **pilas**, the buttresses which support the two contiguous arches of a bridge (**Acad.**), *see* **contrafuerte** (1) ; (8) el. galvanic or voltaic pile.

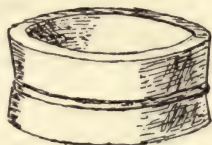


FIG. 62.--Pila (1)  
(after E. Tilmann).

**PILADO**, (1) quantity of mortar ready mixed, *comp.* **pilón** (3) ; (2) pile of ore, *see* **montón** (1).

**PILADOR**, Ant. Col. a wooden instrument, moved by the stamps, when ore is short in the battery, a tell-tale.

**PILAR EL MOLINO**, Ant. Col. mech. prep. said of noise produced by stamps when ore is short in the mortar-boxes.

**PILAR**, (1) pillar, column of stone, post, *comp.* **contrafuerte** (1) ; (2) stone or mound for a landmark on roads, *comp.* **mojón** (1) ; (3) a pillar (usually of mineral) left in a mine for support, *syn.* **bordeta** (if small), **bordo** (2), **macizo** (3), **pilarejo** (if small), Ant. Col. **tapestle** (4), *see* **contrafuerte** (2), **cuña** (3), **retenida**, **testera** (6); *u.* **zapa** (2), *comp.* **llave** (10) ; **sistema por pilares** or **huecos y pilares**, e.m. pillar and stall, *see* **hueco** (5) ; **p. de seguridad**, safety-pillar ; (4) **Zac.**, **Fresnillo** and **Pachuca**, Mex. timb. a vertical prop, receiving the extremities of two or more pieces at the meeting of two galleries, *comp.* **mono** (2).

**PILAREJO** (dim. of **pilar**), *see u.* **pilar** (3).

**PILARETES**, hoist. small uprights of a pulley-frame for supporting the pulley, *syn.* **Cartagena**, Sp. **pies** (8) **derechos cortos**, *see* Fig. 15 e, *u.* **barra** (9), *comp.* **montante** (1).

**PILCHE**, Peru, cup [**jícara** (2)] or wooden bowl (**Acad.**)

**PILETA** (dim. of **pila**), Mex. (1) small tank or reservoir underground for collecting the water of infiltration, *see* **charqueo** (2), **estanque** (3) ; (2) met. the cup [**jícara** (3)] or hollow basin [**vaso** (5)] in front of the furnace into which the melted metal falls (**Gamboa**), *see* **reposador** (2) ; (3) met. crucible of a blast or reverberatory furnace, *see* **crisol** (2) ; (4) **piletas**, riffles, *see* **tendidos** (5).

**PILÓN**, (aug. of **pila**), (1) stone trough, *see* **ábaco** ; (2) **p. de romana** (1), drop-ball or counterpoise of a steelyard ; (3) pyramidal heap of mortar, ready for use, *comp.* **pilada** (1) ; (4) stamp or stamper, consisting of stem or lifter [**mango** (2)] and stamp-head [**calzadura** (2)], *syn.*



**almadaneta** (1), *see* **castillo** (1), **pisón** (2); (5) monkey or rammer of a pile-driver [**martinete** (2)], *syn.* **maza** (2), equiv. Port. **macaco**; (6) Mex. pestle of a mortar (Dwight); *see* **maja**; (7) Col. large wooden mortar used in grinding maize, *see u.* **mazamorro** (2), *u.* **moler**.

**PILOTE**, (1) pile used in pile-driving, *see* **martinete** (2); (2) pilotes, timb. spilling laths, spills or fails, *syn.* **estacadas** (3) **cortadoras**, **estacas** (5), **latas** (2), **medias aspas**, **tabletaca**, equiv. Fr. **palplanches**, Ger. **Pfähle**, **Getriebepfähle**, *comp.* **piquete** (2).

**PIMPLÓN**, Asturias and Sant. Sp. natural waterfall, *see* **salto** (3).

**PINA**, (1) high conical mound of earth; (2) segment (felloe or felly) of a cart-wheel, *syn.* **cama** (2); a certain number of these forms the rim [**anillo** (6)] on which the tire [**llanta** (1)] is placed, *comp.* **camón** (1).

**PIÑA** (pine-apple), (1) Mex. in the patio process, pressed amalgam, *see* **pella** (2); (2) Mex. in the patio process, a cylindrical column or pile of amalgam discs, *see* **bollos** (1), **cuerpo** (1); (3) Mex. in the patio process, a spongy or porous cone of silver left after retorting, the mass being shaped like a pine-apple, *comp.* **barra** (3), **pella** (1); "silver was called in its rough state **plata piña** or **plata pasta**" (H. G. Ward); (4) Chile. bullion; **plata de p.**, Peru, unstamped silver; **plata p.**, Bol. bullion; (5) Mex. cone for sample grinder (Dwight).

**PINABETE**, spruce, fir-tree (*Pinus abies*), *syn.* **pino abete**.

**PINGA**, Phil. pole, generally 1½ m. long, for carrying loads on the shoulders (Acad.).

**PINGAS D'AGUA**, **PINGOS D'AGOA** (lit. water drops), Braz. colourless topaz pebbles, *syn.* **minas novas** (after the district), *see* **topacio** (1).

**PINO**, pine; **p. abete**, spruce pine, *see* **pinabete**; **p. albar**, Scotch pine; **p. alerce**, white larch; **p. cedro**, cedar of Lebanon, *see* **rodano** (2).

**PIÑÓN**, mech. pinion, *syn.* **ala** (1).

**PINTA** (spot or mark), (1) Mex. the appearance of an ore by which is known its greater or less value, according to its colour, grain, weight, etc., good **pintas** are the **gallos** (2), or filaments of silver or gold in the stones, the ores called **apericado**, **ayemado**, **cardenilla**, **cobre** (2), **jaboncillos** (3), **plomo** (2), and **polvorilla** (4); the bad are **antimonios** (2) and **marcasitas**, but it is always necessary to assay and test them (Gamboa); **p. revuelta**, silver ores mixed with iron pyrites, blende, galena, etc.; **p. de metal**, indications of ore; (2) **p. azul**, Pachuca, Hid. Mex. the lower zone of the silver veins in which the quartzose matrix is either of a grey or bluish colour, owing to the presence of various silver ores as sulphides, *comp.* **quemazón** (1); (3) Chile, silver ore assaying over 50 **diezmilésimos**, *comp.* **despinta**; (4) Venez. alluv. m. when gold is sufficiently abundant to make a washing pay, the miners say they have found a **pinta**; (5) "colour" in a batea, *see* **color** (1).

**PINTADORES**, *see u.* **manto** (1).

**PINTAR**, (1) to exhibit **pintas** (1) or indications of ore; "mantos que

hacen pintar la veta," Chañarcillo, Chile, certain beds which make the veins metalliferous, *see u. manto* (1); (2) *see emboquillar, u. tumble*.

**PINTISTA**, *see catero*.

**PÍNULA**, surv. sight of an instrument, *see mira* (1).

**PINZAS**, (1) bor. pinchers or tool for extracting small objects that have fallen down the borehole, equiv. Fr. *accrocheur à pincés*, *syn. tenazas* (3), *see tirabuzón* (1); (2) mech. pincers, *see tenazas* (2).

**PIOCHA**, pick used for digging (*pico de cavar*), and is either single- or double-pointed [con una ó dos puntas (3) ó bocas (6)], *see pico* (2).

**PIPAS**, *piedra de meerschaum*, *see u. piedra*.

**PIPERA**, *see u. pipos*.

**PIPOS**, Serrata de Lorca, Sp. (sulphur mines) temporary blindness produced by bad ventilation, gases, etc., "quedandose pipos los picadores"; the piperia or blindness disappears naturally by remaining in pure air for some hours in the dark (Molina).

**PIQUE**, (1) bottom or ground; (2) *á pique*, Mex. vertical; *clavo á pique*, *see u. clavo* (2); *trabajar á pique* (or *á pico*), Mex. to sink in a vertical direction; (3) Chile and Peru, shaft, *see pozo* (2); *p. maestro*, main shaft; (4) *puque torno*, Chile, horse-whim, *see malacate* (1).

**PIQUEADOR**, blast. the man who strikes the drill, the striker, *comp. borneador*.

**PIQUEAR**, blast. to strike the drill, *comp. bornear*.

**PIQUERA**, met. tap-hole of a blast-furnace, etc. *syn. Mex. piqueta* (3), *puerta* (6), *see sangradera* (2).

**PIQUETA**, (1) mattock or pickaxe, *see zapapico*; (2) *p. con cabeza*, poll-pick (having one end formed into a hammer), equiv. Fr. *pic-à-tête*, *pic-à-roc*, Ger. *Hammerhaue*, *Hammerpickel*; (3) Mex. met. tap-hole, *see piqueta*.

**PIQUETE**, (1) a small *cata* (4); (2) *piquetes*, quarr. wooden pegs used in breaking down rock; *piquetes cónicos*, conical wedges used in spilling in quicksand, equiv. Fr. *picotages*, *see cuña* (1), *comp. pilote* (2); (3) surv. stake, *see estaca* (1); (4) *de piquete*, Mex. said of *magistral*, when a handful, held in cold water, in less than half a minute gets so hot that one has to open the hand, not generally liked by *azogueros*.

**PIQUETERO**, boy who carries the picks or mattocks [*piquetas* (1)] to the workmen in mines (Acad.), *comp. abajador* (1).

**PIQUETILLA**, mas. small pickaxe (*zapapico*), having wide and sharp mouth, and used for making small holes in thin walls (Acad.).

**PIR**, Chile, lead-amalgam in the state of powder, composed of equal parts of lead and quicksilver, sometimes added in the *patio* process to reduce chloride of silver.

**PIRCA**, Chile and Peru, dry stone wall; at Hualgáyoc, Peru, *pircas* are used in supporting underground workings (Santolalla), *see mampostería*.

**PIRCADOR**, Chile, hedger (Henwood).

**PIRCAR**, Chile, to enclose a residence with a dry stone wall (Acad.)  
Peru, to erect a dry stone wall as a support.

**PIRITA**, pyrites, *syn.* **piedra inga**, equiv. Ouro Preto, Braz. chumbo (4); **p. arsenical**, (a) mispickel, (b) leucopyrite; **p. cobriza**, **p. de cobre** or **cobre piritoso**, copper pyrites, *syn.* **cobre** (2) amarillo; **p. común**, pyrite or iron pyrites, *see* **marmaja** (1); **p. de estaño**, bell-metal ore or tin pyrites, *see u.* **bronce** (3); **p. de hierro**, pyrite; **p. de manganeso**, hauerite [ $MnS_2$ ]; **p. magnética**, pyrrhotite; **p. marcial**, pyrite; **p. prismática**, marcasite (marcasita); **p. radiante**, fire-stone or iron pyrites; **p. roja**, niccolite [ $NiAs$ ]; **piritas sanas**, Chile, undecomposed pyrites; *see* **abronzado** (1), **acerado** (1), **azurronado**, **banco** (9), **bauleao**, **binches**, *u.* **bronce** (3), **chino** (1) and (2), **gualda**, **marmaja** (1) to (4), **mica** (2) and (4).

**PIRITOSO**, **SA**, adj. pyritous, containing pyrites; for **cobre piritosa**, *see u.* **pirita**.

**PIRÓMETRO**, pyrometer.

**PIROPO**, **PYROPE**, a magnesia alumina-garnet of a deep red colour, but varying to black and green (J. D. Dana), carbuncle (**carbunclo**), *see* **granate** (1).

**PIRQUÍN**, trabajo al p., Chile, tribute system.

**PIRQUINERO**, Chile, tributer, *see* **campista**; "el que trabaja sin método ni recursos" (Acad.).

**PISAR**, (1) to dip, *see* **inclinarse**; (2) to beat down stones and earth with a mallet; (3) **p. el molino**, Ant. Col. said of stamps, when they pulverise the ore in the battery (Uribe).

**PISO**, (1) floor or level, *syn.* **plan** (1), **planta** (1), *see* **galería**; strictly speaking the whole of the workings from the floor of one level to the floor of the next level above; when a thick bed is worked in two or more sections, the lower one is called **piso** No. 1, the one above **piso** No. 2, and so on, *see* Fig. 63; (2) bottom working of a mine, *syn.* **plan** (2); (3) floor or foot-wall of a vein or deposit, *syn.* **yacente**, *see u.* **bajo** (3); (4) floor of a level, drift or gallery, *syn.* **suelo** (2), *see* **plano** (2), *comp.* **costado**, **techo** (2); (5) **p. de madera**, timb. bunding or sollar, *see* **camada** (3); (6) hoist. deck of a cage, *see* **jaula** (2); (7) **pisos**, Mex. timb. lagging on the floor of a gallery, *see* **revestimiento**, *u.* **guarnición**; (8) "floor" of a horse-whim, *syn.* **andén** (1), *see* **malacate** (1).

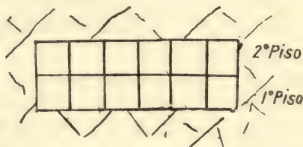


FIG. 63.—Piso (1).

**PISÓN**, (1) rammer for driving earth, stones or piles, *see* **aplanadera**; a pavier's rammer; á **pisón**, by blows of a rammer; (2) Ant. Col. mech. prep. stamper, it has a tenon or neck [**espiga** (2)] by which it is wedged into the wooden stem [**cabo** (5)], *see* **pilón** (4); (3) Chile, a wet crushing-mill, *comp.* **trapiche**.

**PISONEAR**, to ram, with a **pisón** (1), *see* **apisonar**.

**PISTADERO**, pestle, *see* **maja**.

**PISTAR**, to pound (with a pestle, etc.), *see* **machacar**.



- PISTERO**, mech. oiler (Ponce de León), *see* engrasador (1).
- PISTOLA** (pistol), Mex. small drill-hole (Dwight), *see* barreno (1).
- PISTOLETE**, (1) p. de seguridad, blast. safety-pistol used when fire-damp is present ; (2) pistolettes, small boreholes used in regulating or dressing (recortar or igualar) the sides of shafts, etc., *see* barreno (1).
- PISTÓN**, (1) piston of a steam-engine ; ram of a plunger-pump ; p. inmergente, plunger, *see* émbolo (1) ; (2) p. de lavado, Chile, hydr. m. monitor or giant (giganta) ; (3) blast. detonator (cápsula).
- PISTONADA**, stroke of a piston, ram, etc., *syn.* carrera (5), golpe (3).
- PITA**, (1) American aloe, *see* agave ; (2) thread made of the fibre of (1), *syn.* mecate (1) ; cuerdas redondas de p., round pita ropes ; cuerdas planes de p., flat pita ropes, *see* cuerda (1), cucuiza, u. manta (1).
- PITAR**, to whistle (of a steam-engine, etc.).
- PITO**, p. de vapor, steam-whistle, *see* silbato.
- PITÓN**, (1) hydr. nozzle (of a monitor, Pelton wheel, etc.), *see* boquilla (3), *comp.* cañón (7) ; (2) pitones, *see* Fig. 24 d, u. cierre (2).
- PIVOTE** (from Fr. pivot), (1) Tepezala, Aguascalientes, Mex. the chimney [chimenea (1)], one metre in height, of a small copper smelting-furnace (Ramirez), *see* horno (2) ; (2) *see* gorrón (1).
- PIZARRA**, slate ; p. arcillosa, clay slate or argillaceous schist (esquisto arcilloso) ; p. astillosa, splintered slate ; p. azul, Cartagena, Sp. slate rock stained with silicate of iron, *see* u. azul (6) ; p. carbonífera, coal slate or shale ; *see* chanto, esquisto, filada, u. laja, tecacolote ; pizarras de tejar, roofing slates.
- PIZARRAL**, slate quarry, *syn.* cantera (1) de pizarra, equiv. Port. ardosia, ardosieira.
- PIZARREÑO**, ÑA, adj. slate-coloured, slaty, with slaty structure.
- PIZARRERO**, slater.
- PLACA**, plate, mech. foundation plate, *see* plancha (5) ; Mex. jaw-plate of a crusher, *see* quebrantador ; p. de hierro colado, p. de maniobra (Fr. plaque de manœuvre), transp. fixed turn-table or turn-plate, *syn.* plataforma (3) ; p. giratoria, transp. turn-table or turn-plate, *syn.* Mex. cambiavía (2), plataforma (3) giratoria ; placas or placas de cobre, Col. gold mill. amalgamated copper plates ; placas plateadas, Col. silvered plates, *see* u. lámina (1), plancha (2) ; placas de unión, fish-plates, *see* eclisa.
- PLACER**, a placer, generally a gold-placer (placer de oro or aluvión de oro), *syn.* aluvión metalífero, Peru, aventadero (2), aventador (3), Peru and Chile, lavadero, Peru, rebosadero (2), equiv. Braz. lavra (2) [if small, *comp.* faisqueira, venero (3)], *see* abrevadero, aflojar, almocafre, alta (2), amarrar, amolinar (2), apique (3), ataje, u. bajo, ja, barequear, barredura, barrer, batir (1), bombear (2), burro (7), u. buzo, caballo (9), cacho (1) to (3), caliche (8), campana (11), canal (6), canalón (2), capotera, caracas, u. cargado, da, carguero (2), cascalho (2), cascajear (2), cascajero, cascajo (2), (5), (6) and (9), cata (3), cerrazón, cerro (2), chamburgo, chocar, colgar (1) and (2), cortada, creminel, cueva (3),

descapotar, descargar (3), desguachar, desmontar (2) and (3), desmonte (3) and (4), encierro, frente (3), frío, ía (4), grupiaras, hervezón (1), hervida, hondura (2), hoyo (2) and (3), *u.* indicación, invierno, juagada, *u.* lavar, llinqui, mangar, mazamorra (1) and (2), mazamorrero, molino (4), olletas, organal, pañar, pila (5), plan (6), planear, *u.* poner, regatón (1), sabana (2), saca (4), sepé, sobresabana, soplado (2), taboleiros (2) tajo (3), tapanhoacanga, tepostete, tibe (2), *u.* tierra (3), *u.* tonga, tosca (3), trechero, *u.* tumbar, vega, veia (2), venerillo, venero (3), veraneador, veraneo, verano, zambullir; for diamond alluvial deposits, *see u.* diamante; for alluvial tin deposits, *see u.* estaño (2).

**PLAN,** (1) *see* piso (1); (2) bottom level or gallery of a mine, *syn.* piso (2), *see* galería; los planes, the bottom levels, *comp.* alzas (3); (3) p. del tiro, sump of a shaft, *see* caja (2); (4) inclined plane, *see* plano (3); (5) surv. plan, *syn.* plano (1), planta (3), *see* carta (3), mapa; (6) p. del canalón (2), Ant. Col. artificial surface, slightly inclined, constructed on bed-rock or on sand, for the deposition of the alluvium (Uribe); (7) Ant. Col. mech. prep. the die or shoe of a stamp, *syn.* dado (1); (8) trabajar de p., to sink vertically or on an incline.

**PLANA,** trowel, a bricklayer's tool, *see* trulla.

**PLANADA,** top. plain, *see* llano.

**PLANCHA,** (1) cake of metal, *see* descarga (4), *comp.* lingote, quesos, roela, tejo (2), tejón; p. de cobre, cake of copper, *see u.* plancha (2); p. de plomo, pig of lead; (2) plate or thick sheet of metal; p. de acero, steel plate; p. de cobre, copper plate, *see also u.* plancha (1); p. electro-plata, electro-silvered copper plate, *see u.* placa; (3) mech. prep. bucking-board or -plate, *syn.* chapa (2), equiv. Ger. Scheideplatte; (4) turn-plate, *see u.* placa; (5) foundation-plate, bed-plate, *syn.* p. de cimienta (1), *see u.* placa; (6) mud-sill, *see* muertos; (7) a board [tabla (1)]; Mex. timb. plank used as sole-piece in very soft ground, *see* solera (3); (8) Mex. met. one-quarter of a charge of roasted ore—75 lb. (J. Guillemin)—*see u.* carga (4); (9) cramp or cramp-iron, *see* gato (2).

**PLANCHERA,** Mex. (1) met. receptacle or mould of white clay, in which the cakes of metal are formed (Gamboa), from the planchera the molten metal is passed to the ingot-moulds (moldes); (2) ingot-mould of sand, earth or iron (Dwight), *see* molde.

**PLANCHETA,** surv. plane-table, *comp.* grafómetro.

**PLANCHUELA,** for hierro p., *see* hierro (1) cellar; planchuelas, Mex. fish-plates (Dwight), *see* eclisa.

**PLANEAR,** Mex. alluv. m. to extract the gold that exists on the uneven surface or in the fissures, cracks, etc., of soft bed-rock, *comp.* cascabelear (1), hacer tierras, tumbar las tierras de asiento (*u.* tumbar).

**PLANEO,** Mex. alluv. m. cleaning up the uneven bed-rock, *see* planear.

**PLANICIE,** (1) top. plain, *see* altiplanicie, llano; (2) planicies, geol. sides or wings of a saddle [silla (4)] when moderately inclined, equiv. Fr. plateaux, *comp.* laderas (3).

**PLANILLA**, (1) Mex. mech. prep. blanket-board or -table, nicking-table or concentrator, *comp.* *cernidor* (2); in the *patio* process, an inclined platform or sleeping-table, made of bricks or of masonry, for concentrating the tailings from the *tina* (2), and the residues after retorting; in Pachuca it is a plane table, slightly inclined 3 m. long, 2 m. wide, having a receptacle with water at the foot, *see* *polvillo* (3); (2) Mex. met. wooden skimmer for molten metal (Dwight); (3) Mex. packing or goaf, *see* *echar* (2), *relleno* (1).

**PLANILLERO**, Mex. operator on the *planilla* (1), always paid by weight or measure of concentrates produced (Chism); usually old men (*ancianos*), who use a horn spoon [*see u. cuchara* (1)] and smoke cigarettes while they work (Dahlgren).

**PLANILLÓN**, a large *planilla* (1).

**PLANO**, (1) surv. plan or draught, *see* *plan* (5), *u. levantamiento* (1); (2) Mex. floor of a mine-working (Dwight), *see* *piso* (4); (3) plane; *p. inclinado*, inclined plane, incline, *syn.* *rampa* (3); *p. inclinado automator*, self-acting plane; *p. automator de simple efecto*, automatic inclined plane with a counterweight; *p. automator de doble efecto*, ditto, raising empty wagons, *see* *plan* (4), *rumbón* (1); *p. de crucero* (4), geol. plane of cleavage; *p. de estratificación*, geol. plane of stratification; *p. de fractura*, geol. plane of fracture; *p. de junta*, geol. joint-plane; (4) *p. de resbalamiento* (3), geol. slickenside, *syn.* Ant. Col. *espejo* (2), Mex. *espejuelo* (8), *jabón* (4), *liso* (2), equiv. Fr. *raies de glissement*, Ger. *Spiegel*, *Harnisch*, *see* *vetilla* (3); (5) *de plano*, *see u. cobija* (2); (6) *p. de nivel*, surv. datum line (often = sea-level), *comp. u. linea* (1).

**PLANTA**, (1) floor or level, *see* *piso* (1), *galería*; (2) horizontal cut in a deposit, *see* *faja* (3); (3) surv. plan, *see* *plan* (5); (4) plant (of machinery, etc.), *see* *plantel*.

**PLANTAR**, to erect (machinery, etc.), *see* *montar* (1).

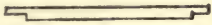
**PLANTEADOR DE MÁQUINA**, engine-fitter (Ponce de León).

**PLANTEAJE, PLANTEAMIENTO**, plant, *see* *plantel*.

**PLANTEL**, plant (of machinery, etc.), *syn.* *planta* (4), *planteaje, planteamiento*.

**PLANTILLA**, (1) model or pattern; foundry pattern (*see* *modelo*); mould (*see* *molde*); *see* *escantillón* (1), *patrón* (2);

(2) transp. iron gauge used in placing rails and in fixing the position of the chairs, *see* Fig. 64; (3)

Hualgáyoc, Peru, timb. sole-piece, *see* *solera* (3).  **FIG. 64.—Plantilla (2)**

**PLASMA**, *see* *prasma*.

**PLATA**, (1) silver, equiv. Port. *prata*; *p. bruta* or *p. virgen*, crude mass of silver; *p. cruda*, *p. esponja*, or *esponja* (2), silver sponge, spongy silver, *see* *p. pasta* below; *p. de ley*, standard silver; *p. de patio*, *p. de pie*, silver produced in the *patio* process; *p. labrada*, wrought silver; *p. mixta*, alloy of gold and silver; *p. pasta*, *p. piña*, *p. de piña*, spongy silver after retorting, *see* *p. cruda* above, *marqueta* (2); silver in its



rough state, *see u. piña* (3); **p. quemada**, burnt silver, *see candelero* (4); (2) silver ore; **plata**, Batopilas, Chih. Mex. native silver or sulphide of silver in masses; **p. agria**, (a) argentite, (b) polybasite, (c) stephanite (rosicler negro); **p. antimonial**, discrasite; **p. azul**, (a) Talpujahua, Mex. argentite, *syn. Zac. p. azul plomillosa*, Chile, plomo ronco, (b) **p. azul acerada**, polybasite (**p. agria** or **petlanque acerado** of Talpujahua), (c) **p. azul de Catorce**, selbite or carbonate of silver, *syn. metal azulado*, (d) **Zac. Mex. chloride of silver**; **p. blanca**, native silver; **p. blanca pardusca**, a var. of argentiferous and antimoniferous galena (Humboldt); **p. ceniza** or **metal cenizo**, Mex. chloride of silver, in Catorce, a kind of powdery chloride of a dirty grey colour (Chism); **p. color de rosa**, kind of native silver of a reddish tinge; **p. córnea** or **metal blanco**, horn silver [AgCl]; **p. córnea amarilla**, iodyrite; **p. córnea blanca**, cerargyrite or horn silver; **p. córnea verde**, embolite; **p. de clavos**, Batopilas, Chih. Mex. native silver in nail and wire forms occurring in calcite (Dahlgren); **p. dúctil**, ductile argentite; **p. gris**, horn silver; **p. maciza**, Peru, native silver generally in small sheets (Dwight); **p. nativa**, native silver; **p. negra**, (a) argentite, *see u. polvorilla* (1), (b) **p. negra prismática**, stephanite, *syn. molonque relumbrosa*, *see psaturosa*; **p. parda**, horn silver; **p. parda azul y verde**, horn silver of different colours; **p. roja**, ruby silver (generally proustite); **p. seca**, silver ore which does not unite with mercury in amalgamation; **p. sulfúrea agria**, stephanite or brittle silver ore; **p. verde**, (a) chlorobromide of silver or embolite, *syn. metal verde*, (b) Plateros, Mex. bromyrite or bromide of silver; (c) Catorce, S. L. Pot. Mex. a mixture of bromide (bromyrite) and iodide of silver (Chism); **p. vítrea**, argentite; *see argirosa*, azul (2) and (3), **azulaque** (2) to (4), **azurronado**, banco (9), **bodoque**, *u. bola* (3), *u. bronce* (3), **broza** (2) and (5), **caliche** (7), **caracol** (1), **cardenilla**, **carne de vaca** (1), **cebo** (1), **chispa** (5), **colorados** (1), **colpa** (4), **frío**, **ía** (2), **fríos**, **gancho** (6), **humiento**, **ixtajales**, **jabón** (2) and (3), **lechedor** (1) and (2), **lipta**, **llictería**, **miche**, **mogino**, **mogrollo**, **molonque**, **mosqueada**, **mulatos**, **negrillos** (1) to (5), **negro** (5) to (7), (10), (11), **pacos** (1) and (2), **paja** (4), **pasamano** (4), **pasta** (1) to (5), **pavonado** (1) and (2), **petlanque**, **polvillo** (2), **polvorilla** (1), **quemazón** (1), **rasposo**, **reventón** (2), **rosicler**, **rueda** (6), **sil**, **tacana**, **tascina**, **tepostel** (1), *u. verde*; (3) **p. azul**, argentiferous copper (del Rio), *comp. p. azul u. (2)*.

**PLATAFORMA**, (1) platform, stall, collar or bunding, *see camada* (3) *u. rachas*, **tabladillo** (1), **tabléro** (2); (2) scaffold or cradle, *see descanso* (4); (3) transp. turn-table, *see u. placa*; (4) **p. de descarga**, hoist. a long-necked two- or three-decker skip or "giraffe"; (5) *u. haul. carriage* used on steeply inclined planes, *syn. tablero* (4), **truc**, **zorilla** (2), equiv. Fr. **chariot-porteur**, Ger. **Bremsgestell**, **Bremswagen**.

**PLATILLO**, (1) small plate of iron or disc; disc or valve of the chain-pump; (2) Mex. red earthen plate for testing ore or slimes, *comp.*

batea ; (3) small cog-wheel, *see u. rueda* (1) ; (4) scale-pan of weighing-balances, *syn. plato*.

**PLATINA**, an ore of platinum ; for *hierro p.*, *see u. hierro* (1).

**PLATINO**, platinum, *see juanblanco* (1).

**PLATO**, plate, scale-pan, *see platillo* (4).

**PLATÓN** (aug. of *plato*), pan used for ore-washing (Venator), *comp. batea* ; a small pan = *platoncito* (Restrepo).

**PLATONCITO**, *see u. platón*.

**PLAYA**, (1) shore, strand, beach ; *playas*, shores or banks of rivers, sometimes auriferous ; the formation, generally sandy or stony, adjacent to the channel [*cauce* (1)] on both sides, and not inundated by the highest floods or *crecientes* (Muñoz), *syn. orillas* (1), *comp. u. vega* ; *playas bajas*, auriferous *playas* which are now below the level of the adjacent river or stream, *see saca* (4) ; (2) pump. column or set, *see u. juego* (1).

**PLAYERO**, Pallasca, Peru, inhabitant employed in gold-washing, *see lavador* (1).

**PLAZA**, (1) room, space ; *p. de enganche*, *see cóncava* ; (2) met. bottom or sole of a shaft-furnace [*see cuba* (4)] ; floor or bed of a reverberatory furnace, *see asiento* (8).

**PLAZO**, term of a bond, or refusal of a mining property, etc.

**PLEGADURA**, **PLEGAMIENTO**, geol. folding, equiv. Fr. *plissement*.

**PLEGAR**, geol. to fold (of strata).

**PLEITO**, (1) covenant, contract, *see contrato* (1) ; (2) law-suit ; “*más vale ajuste malo que pleito bueno.*”

**PLIEGUE**, geol. fold or slip, equiv. Fr. *pli* ; *p. convexo* or *inflexión*, a saddle with a narrow fold, equiv. Fr. *crochon*, *comp. u. undulaciones*.

**PLOMADA**, plumb, plummet, *syn. aplomo, plomo* (5), equiv. Port. *chumbo* (2).

**PLOMBAGINA**, plumbago or graphite, *see grafito*.

**PLOMERO**, (1) plumber ; (2) Mex. lead-tapper ; furnace-man (Dwight).

**PLOMILLO**, (1) *plomillas lavados*, Mex. mech. prep. schlich, *see marmaja* (2) ; (2) *plomillos*, met. leady particles found on the surface of slags, *see escoria* (1) ; (3) S. L. Pot., Mex. tin ore in which hematite predominates, or is present in equal proportions with it (J. P. Manzano), *see estaño* (2).

**PLOMILLOSO**, **SA**, adj. for *azul plomillosa*, *see azul* (3).

**PLOMO**, (1) lead, equiv. Port. *chumbo* (1) ; *p. afinado*, *p. dulce*, refined lead ; *p. agrio*, slag lead, hard lead ; *p. de obra*, Mex. argentiferous lead (Acad.) ; base lead bullion ; *p. dulce*, *see p. afinado* ; *p. en galápagos*, pig lead ; *p. en plancha*, lead in sheets ; *plomo-plata*, lead silver ; *p. pobre*, lead poor in silver ; *p. rico*, lead rich in silver ; (2) lead ore ; in Mex. generally = *galena* (*galena*), when fine-grained = *reluciente* (*metal de pinta*), when coarse-grained = *soroche* (*metal de ayuda*) ; *p. amarillo*, yellow lead ore, wulfenite or lead molybdate, equiv. Ger. *Gelbbleierz* ; *p. blanco*, cerussite, or lead carbonate, *see*

- copalillo (2), *u. soroche* (2); *p. verde*, green lead ore, pyromorphite or lead phosphate; *see cuajado* (1) and (2), *galena*, *resecos*; (3) *plomo ronco*, Peru, Chile and Arg. *argentite*, *see u. plata* (2); (4) *piedra mineral de p.*, *plumbago*, *see plumbagina*; (5) *plummet*, *see plomada*.
- PLOMOSO**, SA, *adj. see u. liga* (2) and *soroche* (2).
- POBLACIÓN**, (1) population; (2) inhabited place, town or village *syn. poblado*, *obs. puebla* (town), *see pueblo*.
- POBLADO**, *see población* (2).
- POBLADOR**, (1) Mex. boss-miner, shift-boss, *see sotominero*; (2) blast. the miner who points the holes (Dwight).
- POBLAR**, to set on workmen in a mine, *comp. pueble*.
- POBRE**, *adj.* barren, sterile (of rocks, veins, etc.); low grade (of ores, metals, etc.).
- POBREZA**, poverty; *p. de la mina*, said when the gold is disseminated and not rich (V. Restrepo), *comp. tope*.
- POÇÃO**, Braz. pits in river-beds in which diamantiferous *cascahlo* is found (Fuchs and De Launay).
- POCERO**, (1) well-borer or sinker; (2) shaft-man, pitman; (3) c.m. onsetter, m.m. filler, *see enganchador* (1).
- POCILLO**, (1) small well, *see pozo* (1); (2) m.m. winze, *syn. p. interior*, *see clavada*; (3) small sump at the bottom [*caldera* (5)] of a shaft, *equiv. Fr. avant-puits*, *see caja* (3); (4) pass or shoot (stopping), *see paso* (2).
- POÇO**, Port. (1) well, *see pozo* (1); (2) shaft, *syn. Ouro Preto*, Braz. *pia* (J. L. Tonkin), *see pozo* (2); (3) small tank or cistern.
- PODER**, (1) leg. power of attorney, *see carta* (5); (2) thickness, *see anchura* (1); (3) power, force; *p. calorífico*, calorific power; *p. indicado*, indicated (horse) power, *see potencia* (1).
- PODERHABIENTE**, attorney, *see apoderado*.
- PODRIDO**, DA, *adj.* rotten; *piedra podrida*, rotten stone.
- PODRIDAS**, *see terrosas*.
- PODRIR (PUDRIR) JAGUAS** (3), Ant. Col. to expose concentrates for some time to atmospheric influences, in order to oxidise the sulphurets, and thereby facilitate the extraction of the gold.
- POLEA**, (1) pulley-wheel or sheave (of a pulley-block), block pulley, *syn. carrillo* (3), *roldana* (1), *equiv. Fr. poulie*, Ger. *Scheibe*, *see poli-pastos*; (2) ordinary pulley for transmitting power, etc., *syn. gar-rucha* (1), *equiv. Fr. poulie*, Ger. *Rolle*; *p. acanalada*, grooved pulley; *p. de andarivel*, traversing pulley; *p. de cambio*, change pulley; *p. de tensión*, tension pulley, *see tensor*; (3) hoist. pit-head pulley, pulley or sheave, *syn. roldana* (2), *rondana*, *rueda de cuenta* (4), *equiv. Fr. molette*, Ger. *Seilscheibe*, *see rayo*; *p. de mandíbulas*, clip-pulley (*e.g.*, Fowler's).
- POLÍN**, (1) mech. wooden roller, *see rodillo*; (2) Ant. Col. rail. sleeper, *see durmiente* (1).



**POLIPASTOS, POLISPASTOS**, mech. tackle, *see* **aparejo** (1).

**POLLOS** (chickens), Peru, small bags of rich ore given by the miners on Saturdays to the proprietors (Santolalla).

**POLO**, (1) geogr. pole ; (2) el. pole.

**POLVEO**, Mex. amalgam (*amalgama*) formed in the caldron process [*cazo* (3)] of a clear lead-grey colour, and formed of very fine particles, similar to dust (S. Ramirez) ; it is composed of two parts of mercury and one of silver by weight (Dr. Percy), *comp.* **limadura** (4).

**POLVILLO** (fine dust), (1) *gente de p.*, Mex. day-labourers, *see* **trabajador** ; (2) **polvillos**, Mex. tender rich ores ; **polvillos buenos**, good ores of this class, *syn.* **polvillones** ; **polvillos y jabones**, from the *veta madre*, Guan. Mex., are the richest ores yielding about 2000 ounces of silver to the short ton, *see* **apolvillado**, *u.* **liga** (2), **plata** (2) ; (3) Mex. in the **patio** process, rich black sulphides or concentrates left on the **planilla** (1), these are washed in the **boliche** (1), the resulting concentrates being also called **polvillo** ; tailings generally, *see* *u.* **cabecilla** (1), **quesos** and **relave**, *comp.* **marmaja** (2) ; (4) *see* *u.* **tequezquite**.

**POLVILLONES**, *see* *u.* **polvillo** (2).

**POLVO**, dust ; ore in the condition of dust ; flue-dust, *see* **polveo**, **pólvora** (2) ; **polvos de carbón**, coal dust, *comp.* **temescuitate** (1) ; mech. prep. material smaller than fine sand, the size of whose grain cannot be appreciated by touch (Ibran), *see* **harina** (2), *comp.* **arenas** (2), *u.* **granzas** (1).

**PÓLVORA**, (1) gunpowder ; in Span. Am. miners' term for any blasting material ; *p. de algodón*, cotton powder ; (2) obs. powder, dust, *see* **polvo**.

**POLVORERO**, powder-man, powder-monkey.

**POLVORILLA**, (1) argentite ; Sp. the name given to an earthy var. very similar to **tacana** ; Zac. Mex. and Bol. generally disseminated, *syn.* **plata negra** (a) ; Cerro de Pasco, Peru, dark, powdery and decomposed ; Arg. pure, when it exists in cavities of ordinary ore, or as a mass of little black agglomerated particles, which disintegrate or separate on being touched, or when exposed to the air (Hoskold), *see* **plata** (2) ; (2) Tamaya, Chile, a highly ferruginous pulverulent matter, of a dark colour, containing small particles of phillipsite [*see* **pecho** (3)], forming the filling of the copper deposit near the rich portions (Fuchs and De Launay), *see* **cobre** (2) ; (3) Peras, Oaxaca, Mex. altered marcasite with some gold (Bol. de A. M. é I.), *see* **marcasita**, **oro** ; (4) **estaño de p.**, Durango, Mex. tin ore penetrating the country (rhyolite), and converting it into a very friable rock (C. Patoni), *syn.* **polvorillo**, *see* **estaño** (2).

**POLVORILLO**, *see* **polvorilla** (4).

**POLVORÍN**, storeroom for gunpowder ; powder magazine.

**POLVORIZACIÓN**, *see* **pulverización**.

**POLVORIZAR**, *see* pulverizar.

**POMBEIRO**, Port. S. Afr. leader of a gang of carriers (Elwes).

**PÓMEZ**, pumice-stone, *syn.* piedra p. (Port. pedra pomes), piedra tosca (a), ponce, *see* obsidiana, tepetate (3).

**PON**, *see* quita y pon.

**PONCE**, pumice-stone, *see* pómez.

**PONER**, p. en juego, mech. to throw into gear ; p. en marcha, mech. to start ; met. to blow in a furnace ; p. en obra, to construct, build ; p. en principal (1), Ant. Col. alluv. m. to make a current of water flow as straight as possible in order to facilitate the exploitation of its margins (Uribe) ; p. por tierra, to pull down (a building, etc.) ; p. puerta (4), Ant. Col. to put timber-frames (marcos de madera) in an adit, in order to prevent a cave or derrumbamiento (Uribe) ; p. un forro, *see* u. forro (3) ; p. un registro, *see* denunciar.

**PONTÓN**, pontoon (of a dredge).

**POPA**, Chocó, Col. a kind of timber, useful for making wheelbarrows, etc.

**POQUITEROS**, *see* buscones.

**PORCA**, Port. screw-nut, nut, *see* botão, tuerca.

**PORCELANA**, (1) porcelain ; china-ware, *see* china (4) ; (2) tierra de p., china-stone.

**PORFIDITA**, porphyrite.

**PÓRFIDO**, (1) porphyry, *syn.* pórfiro ; p. acanterado, Mex. probably rhyolite or piedra acanterada ; p. metalífero, Pachuca and Real del Monte, Mex. metalliferous porphyry, pyroxenic andesite for the most part ; p. negro, Almaden, Sp. melaphyre (*see* mármor) ; p. traquito, trachyte porphyry ; *see* u. ojo (5), u. ópalo, tosca (1) and (6) ; (2) Venez. reddish pink or brown ferruginous hornstone, sometimes becoming jasper, sometimes contains crystals of iron pyrites, or cavities left by their decomposition—visible gold occurs in it, and it is regarded as a favourable indication for gold (Dr. Foster), *syn.* pórfiro, cuarzo morado, piedra morada, *see* u. córneo, ea ; (3) jasper, *see* jaspe (1).

**PORFIRIZACIÓN**, Mex. pulverising ores [molienda (1)], properly speaking, by reducing granza (1) to an impalpable powder—effected by arrastres and tahonas (Ramirez), *see* pulverización, *comp.* granceo.

**PÓRFIRO**, *see* pórfido.

**POROSO**, SA, adj. porous, *see* u. caliche (1).

**POR PIE**, Mex. the patio process (Dwight), *see* pie (11).

**PORRA**, sledge, at Almaden, Sp. weighing 27 lb., *see* maza (3).

**PORRILLA**, small hammer used by smiths, *see* martillo.

**PORRONGUITO**, Peru, a crude quicksilver measure (Dwight).

**PORTA**, *see* puerta.

**PORTAAISLADOR**, el. insulator or support.

**PORTABANDERA**, surv. flag-bearer.

**PORTACADENA**, surv. chain-man.

**PORTADA**, timb. frame in a gallery formed of two leg-pieces and a cap-piece (Ger. *Thürstock*), *see* **cuadro** (1), *u.* **medio**, **ia**; **portadas unidas**, the Altenberg method of spilling through loose blocks, as distinguished from the ordinary Silesian method, *see* *u.* **labor** (2); vent. wrought-iron frame of doors, which can be hermetically sealed, if necessary; for **tabla portada**, *see* **tabla alcaceña**, *u.* **tabla** (1).

**PORTADOR**, bearer of loads, *see* **gavia**; carrier.

**PORTAMECHA**, (1) wick-holder of a lamp (**lámpara**); (2) blast. cap-holder.

**PORTAVÁLVULA**, valve bearer or frame.

**PORTAVELA**, candle-holder.

**PORTAVIENTO**, blast-pipe of a blast-furnace, for conveying air to the twyers (**toberas**).

**PORTE**, (1) cost of carriage, freight, *see* **flete**; **p. franco**, free of postage; (2) burden or tonnage (of a ship).

**PORTEO**, portage, cartage.

**PORTERO**, porter at the gate; vent. door-keeper, door-tender; Peru, overseer or boss, *see* **capataz** (3).

**PORTEZUELA**, Mex. a pass between hills, *see* **paso** (4).

**PORUÑA**, Chile, Arg. a horn dish used in panning gold, *see* Fig. 65, *see* **cuchura** (1), *comp.* **batea**, **puruña** (2).



FIG. 65.—Poruña.

**POSESIÓN**, possession, *see* *u.* **registro**.

**POSESORIO**, **IA**, adj. possessory, *see* *u.* **acción** (2).

**POSTE**, timb. post, stull, stake, pillar; **postes**, hoist. masonry pillars against which the legs of the head-frame of a mule-whim [**malacate** (1)] abut, *see* *u.* **puente** (3).

**POSTEO**, timb. putting in posts or stemples.

**POSTIGO**, a by-door; vent. a door within a larger door, kept open in order to pass a portion of the air-current only, *see* **puerta** (1).

**POSTILLÓN**, **válvula p.**, ball-valve, *see* *u.* **válvula**.

**POSTIZA**, row-lock, *see* *u.* **horqueta** (1).

**POSTIZO**, **ZA**, adj. false; **avance postizo del cilindro**, false cylinder-head (Fr. *tête fausse du cylindre*).

**POSTOR**, bidder at a public sale, *see* *u.* **rescate** (2).

**POTENCIA**, (1) power; **p. calorífica**, calorific power, *see* **poder** (3); (2) width or thickness of a vein, *see* **anchura**.

**POZACO**, Cartagena, Sp. winze (Moncada), *see* **clavada**.

**POZO** (Port. **poço**), (1) well; **p. absorbente**, absorbing well; **p. artesiano**, artesian well; *see* **noria** (2), *comp.* **puquio** (1); (2) shaft or pit, *syn.* Ant. Col. **apique** (1), **hornacho** (1), Peru, **pique** (3), Mex. **tiro** (1), **vía** (2) de **comunicación**, equiv. Fr. **puits**, Ger. **Schacht**, *see* **ahonde** (2), **caña** (4), **socavón** (4), **zurdo**, *comp.* **trancada** (2); **p. de arrastre**, inclined shaft; **p. de bombas**, **p. de desagüe**, pumping shaft, drainage shaft; **p. de entrada**, de **escalas**, or de **escaleras**, ladder-way shaft; **p. de entrada de aire**, downcast; **p. de extracción**, hoisting shaft;



p. de indagación or de reconocimiento, exploratory shaft ; p. de introducción, shaft used for lowering rock or other material ; p. de salida de aire, upcast ; p. de una cuerda, undivided shaft ; p. de ventilación, air shaft, *see* lumbrera (1) ; p. inclinado, inclined shaft ; p. maestro, main shaft ; p. quebrado, inclined shaft, the angle of which changes brusquely ; p. vertical, vertical shaft ; (3) Mex. winze, *syn.* p. interior or de comunicación, *see* clavada ; p. de arrastre, inclined winze ; p. y patilla (2), passage, with alternating vertical and inclined portions, for the transportation of ore and waste to the surface on the backs of labourers (Dwight) ; (4) a deep hole in a river ; a whirl-pool, *see* remolino (1).

PRASIO, prase or leek-green var. of quartz (cuarzo).

PRASMA, agate (ágata) of dark green colour, *syn.* plasma.

PRATA, Port. silver, *see* plata (1) ; p. en barras, silver in bars.

PRECIOSO, SA, adj. precious ; piedra preciosa, gem or precious stone, *syn.* piedra fina.

PRECIPICIO, precipice or cliff, *syn.* acantilado, barranca (3), derrumbadero (1), despeñadero, frontón (3), voladero, *see* flaqueza (2).

PRECIPITADO, Mex. metallic copper precipitated by iron or zinc, and used in the patio process.

PRECIPITADOR, Mex. workman in a leaching-mill who adds the precipitant to the silver solutions (Dwight).

PRECIPITADORA, precipitating vat or tank.

PREDIO, landed property, farm, real estate ; p. minero, mining property.

PREFECTO, S. Am. prefect, whose jurisdiction is over the alcalde, *syn.* Mex. jefe político.

PREGO, Port. nail, *see* clavo (1) ; p. trabal, great nail to fasten beams (Elwes).

PREGONES, publication by the common crier, *e.g.*, of denouncements of claims, etc.

PREMIO, (1) reward, *see* gratificación, merced, regalo ; (2) premium, interest.

PRENSA, (1) prensas, Ant. Col. very narrow planks (tablones) used for the sides of flumes, *e.g.*, 11 feet long by 2 inches by 3 inches ; (2) the upper horizontal tie of a head- or pulley-frame, *see* Fig. 15 c, u. barra (9) ; (3) press ; Mex. vice.

PRENSAESTOPAS, st. eng. and pump. stuffing-box, *see* caja (5).

PREPARACIÓN (preparation), (1) opening out or development, as distinguished from installation (instalación) and exploitation (explotación) ; (2) p. mecánica, mechanical preparation, dressing or ore-dressing, milling.

PREPARAR, to prepare ; p. minerales, to dress ores.

PREPARATIVO, VA, adj. preparative, *see* u. labor (2).

PREPARATORIO, *see* u. trabajo (2).

PRESA, (1) dike, dam, reservoir-dam, mole, bank, *see* azud (1), barraje, cerramiento, malecón (1), parada (4), puerto (4), represa (1), ribero

tambre, tapa (5), tapón (2), tranque, trincho (2), tupia, vertedero (1), vertiente (4), zafareche, *comp.* dique (1), estanque (1); (2) drain, trench, conduit, *see* acequia, *u.* caz; (3) Ant. Col. cross-tie of a flume or trestle aqueduct [mampuesto (3)], consisting of two cheek-pieces of wood united above and below by a horizontal piece of wood called the cabezal (5).

**PRESERO**, person in charge of a dam or ditch, *see* presa (1) and (2).

**PRESIÓN**, pressure.

**PRESTADO, DA**, adj. lent; *ademe de p.*, or *obra de p.* or *de pasajero*, provisional or temporary timbering as *sollar* or bunding [camada (3)] or bridge across openings in the lode [*see* puente (3)].

**PRESUPUESTO**, estimate or calculation of cost, *see* costo (2), *valuación*.

**PRETIL**, breastwork of masonry or other material in mines, *syn.* parapeto, *see u.* trincho (1).

**PRETILERO**, Guan. Mex. mason, *see* alarife (2).

**PRIETO, TA**, adj. blackish, *see* negro (5); rebellious, *see u.* rebelde.

**PRIMERO, RA**, adj. first, principal; *primera* (clase) or *de fuego*, Pachuca, Mex. ore containing more than 30 marcos of silver per *montón* of 30 quintales, and which is sold or exported, *comp. u.* común, segundo, *da*; *primeros auxilios*, first aid (to the wounded).

**PRINCIPAL**, Ant. Col. (1) artificial drain or channel used in alluvial mining, *see* desguachar, *hijuelos*, *u.* poner, *comp.* acequia; (2) large axle-tree or cam-shaft of a native mill, it carries the *dientes* (2) [Sp. *lenguas* (3)] corresponding to the cams of modern mills; axle-tree of any water-wheel, *see* árbol (3), burro (4).

**PRIVILEGIO**, (1) grant, concession, *see* concesión (1); (2) patent.

**PROBETA**, chem. test-tube; *p.* graduada, graduated test-tube.

**PROCEDIMIENTO**, met. process, *see* vía (6).

**PRODUCCIÓN**, production, output, *see* extracción (2)

**PRODUCTO**, (1) product, return or yield, *syn.* frutos (1), *rendimiento*, *comp.* beneficio (2); (2) chem. and met. product.

**PROFUNDIDAD**, (1) depth (of a shaft, etc.), *syn.* hondura (1), tiro (10), *comp.* chile (2); (2) profundidades, Almaden, Sp. staples or winzes, *see* clavada.

**PROFUNDIZACIÓN**, sinking or deepening, *comp.* ahonde (1); *p.* bajo caldera (5), deepening a shaft below the sump or well (Fr. *sous stot*).

**PROFUNDIZAR**, to sink or deepen, *comp.* ahondar.

**PROMEDIO**, average (*término medio*).

**PROMONTORIO**, (1) a considerable elevation of ground, *comp.* cerro (1); (2) top. promontory, headland, *syn.* morro (1), punta (9); (3) Mex. an irregular deposit or mass, *see* masa (3).

**PROPIEDAD**, property; *p.* minera, mining property; *p.* mueble personal property; *p.* raíz, real estate, *see* raíz.

**PROPRIETARIO**, proprietor; *p.* de una mina, owner of a mine, *syn.* Mex. amo (2), dueño (1), Cerro de Pasco, Peru, minero (4).

**PRÓRROGA**, prorogation; Mex. an extension of time (Dwight).

**PROSPECTAR** (from Engl.), to prospect.

**PROTOCOLIZACIÓN**, Span. Am. record of a document by a Public Notary.

**PROTOCOLO**, minutes, protocol, registry; a judicial register.

**PROVECHO**, profit, *see* **ganancia**.

**PROVINICA**, province, one of the large divisions of a territory or state (Acad.), *see* **marca** (3), **partido** (1).

**PROVISIONALES**, Almaden, Sp. brick arches, put in as supports when working away the centre of the deposit (Molina), *see* **arco**.

**PRUEBA**, (1) test; **p. en crudo**, Mex. in the **cazo** or **patio** processes, testing the condition of the amalgam by washing a small portion in a horn spoon; after having eliminated extraneous substances, a little quicksilver is added, in order to ascertain whether more is required or otherwise; (2) **pruebas**, leg. proofs, evidence.

**PSATUROSOSA** (from Fr. **psaturöse**), brittle silver ore or stephanite, *see u. molonque*.

**PUCELANA**, *see* **puzolana**.

**PUCHA**, Col. one-sixteenth part of an almud.

**PUDINGA** (from Engl.), geol. pudding-stone, conglomerate, *see* **conglomerado**.

**PUDRIMIENTO SECO**, dry-rot.

**PURDRIR**, *see* **podrir**.

**PUEBLA**, *see* **población** (2); **mármol de Puebla**, a species of onyx marble from the quarries of Teocalli, near Puebla, Mex.

**PUEBLE**, Mex. (1) orig. actual work in a mine, with the number of labourers prescribed by the **Ordenanzas**; **horas de p.**, actual working hours, *see u. tequio (2); (2) number of workmen on a core or shift of eight hours; (3) core or shift of eight hours; **p. de día**, day-shift; **p. de noche**, night-shift, *see* **relevó**.*

**PUEBLO**, (1) town, village, inhabited place, *see* **población**, *comp.* **aldea**, **caserío**, **cuadrilla** (2); (2) population, inhabitants of a place; (3) pueblos, Col. Indian graves [**guacas** (1)] in groups.

**PUENTE**, (1) any bridge of wood, metal or other material; **p. colgante** or **suspendido**, suspension bridge; **p. de armadura**, girder-bridge, truss-bridge; **p. de caballete** (10), **p. de enrejado**, trestle-bridge; **p. de celosía**, lattice-bridge; **p. de cimbría**, Chile, suspension rope-bridge, *see* **oroya**, **tarabita**; **p. de contrapeso**, cantilever bridge; (2) **p. de hogar**, fire-bridge of a boiler, *see* **barba**, *u. puerta (3); met. bridge (of a furnace), *see u. altar* (1); (3) head-frame of a mule-whim [**malacate** (1)] composed of a horizontal beam ("span-beam") resting on inclined legs or posts, and strengthened with inclined struts or props. The foot of the posts is often buried in masonry (Gillman), *see u. poste*; (4) timb. timber which opposes lateral pressure, and which may be horizontal, vertical or inclined (Ezquerria), *comp.* **estemple**; (5) **puentes**, Zac. Mex. timb. thick boards or beams placed in a pair of stulls [**riostra** (2)], 1.5 m. to 2 m. apart and perpendicular to them;*



they are put across openings in a lode not having a level [*piso* (1)], and form a sort of *sollar* [*plataforma* (1)], *see* *sopanda* (2); (6) *puentes*, Zac. Mex. timb. wall-plates, *see* *largueros* (2); (7) timb. cap-piece, *see* *capa* (4); (8) *p. levadizo* (draw-bridge), "drop" of Newcastle district, England (Molina); (9) b. constr. transom, lintel, cross-beam.

**PUERTA**, (1) door, obs. *porta*, *see* *salieran*; *p. de corredera*, sliding-door, *see* *corredera* (6); *puertas*, c.m. vent. doors, *comp.* *postigo*; *puertas de seguridad* or *de salvamento*, safety-doors, which are dropped by force of explosion; (2) *p. valla*, hoist. barrier or sliding-gate, *see* *barrera* (5); (3) *p. de la caldera*, manhole. NOTE.—Sometimes the bridge of a boiler, *see* *punte* (2). (4) Ant. Col. timb. door set or frame, *see u.* *cuadro* (1) and *poner*; (5) *puertas*, Mex. hard rocks or large stones [*peñas* (1)] which conceal a vein, and which have to be blasted out in order to discover the latter (Gamboa), *comp.* *caballo* (5); (6) *p. de graza*, Mex. met. slag-tap; *p. de plomo*, lead-tap (Dwight), *see* *piquera*.

**PUERTO**, (1) port, harbour, *syn.* *embarcadero* (1); (2) top. pass, *see* *paso* (4); (3) top. mountain or chain of mountains having one or more passes (Acad.); (4) prov. dam or palisade of turf, wood and gravel, *see* *presa* (1).

**PUESTO, TA**, pp. of *poner*, put; *puesta en marcha*, mech. started (Fr. *mise en marche*); for *puesto de tabla*, *see u.* *tabla* (3).

**PULGADA**, inch; *p. de minero*, miner's inch, equiv. to 74 or 75 cubic m. in twenty-four hours; *una p. (pulgarada) de oro en polvo*, a pinch of gold dust.

**PULIR**, to polish; for *piedra de p.*, *see* *tizar*.

**PULSÓMETRO** (from Engl.), pulsometer (pump).

**PULVERIZACIÓN, POLVORIZACIÓN**, mech. prep. pulverisation or comminution (of ores), *syn.* *tritución*; it comprises two operations, (1) *granceo* and (2) *molienda* (1) or *porfirización*, *comp.* *maceo*.

**PULVERIZADOR, PULVERIZADORA**, mech. prep. pulveriser, *syn.* *tritrador, trituradora*.

**PULVERIZAR, POLVORIZAR**, mech. prep. to pulverise or grind (ores, etc.), *syn.* *triturar*, *comp.* *moler*.

**PUNA**, *see* *páramo*.

**PUNTA**, (1) sharp end of an instrument, point of a pick, etc., *syn.* *boca* (6), *clavo* (5); (2) transp. point, *see* *corazón* (2); (3) *cajones* (4) *de p.*, mech. prep. pointed boxes (Ger. *Spitzkasten*); (4) Mex. cut of turf, *see u.* *cuchara* (3); (5) Mex. small cord for tying ore-sacks (Dwight); (6) *puntas*, Cerro de Pasco, Peru, a party of miners who work for twelve hours, from 6 A.M. to 6 P.M. or from 6 P.M. to 6 A.M.; each gang is under a *mayordomo*, *comp.* *parada* (3), *relevo*; (7) *puntas*, crowbar and gad, "se obtienen regulares avances con las puntas, es decir, con la barra y la cuña," *see* *barra* (1), *cuña* (1); (8) top. summit, *see* *cima*; (9) top. headland, promontory, *see* *promontorio*

(2); (10) end of a log, after beams, etc., have been sawn from it (Velázquez), *see* **leño** (1); (11) *see u. vara* (2).

**PUNTAL**, (1) prop to support a wall, building, etc., *see* **apoyo**, **cuento**, **tentemozo** (1), **tornapunta** (5); (2) timb. upright, post, stanchion or leg, leg-piece, *see* **peón** (4); (3) timb. prop or single prop, *see* **mono** (2); (4) Guan. Mex. timb. end-piece of a shaft-frame, *see* **crucero** (3); (5) *see* **cadena** (3); (6) **encubado con puntales**, prop crib-timbering.

**PUNTE**, Col. tree whose wood contains 8 per cent. of tannin; this and **comino** are about the only trees of that country not attacked by the white ant [**comejen** (1)]; **puntes** are used for the uprights (**estantillos**) of houses.

**PUNTERO**, (1) chisel used by stone-cutters, *see* **cincel** (1); (2) pointed borer or gad, *see* **cuña** (1).

**PUNTEROLA**, a short pick, chisel or wedge, used with a handle, Fr. **pointerolle**, *comp.* **cuña** (1); short bar of iron with a steel point (**Acad.**).

**PUNTILLA**, (1) small nail [**clavo** (1)] with a small head,  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1 inch in length, *comp.* **tachuela**; a brad; (2) **puntillas**, small pointed pieces of wood or spiles, used in tubbing, *see* **apuntillado**.

**PUNTISTA**, Mex. the labourer who knocks down all loose rock in the face or stope, leaving it ready for the next shift (Dwight).

**PUNTO**, (1) **p. de partida**, point of discovery of a vein; (2) **p. de partida**, surv. point of commencement in measuring a claim or claims; (3) **p. de enganche**, m.m. plat, c.m. inset, *see* **cóncava**; (4) **puntos singulares**, exceptional excavations or workings, *e.g.*, plats (**cóncavas**); (5) (**bóveda de**) **medio punto**, an arch of semicircular form, *see* **arco**; (6) **p. de reunión**, vent. point where two or more air-currents meet; (7) **p. muerto**, mech. dead point; (8) **p. de marca**, surv. station, *see* **estación** (4); (9) twelfth part of a line.

**PUNZÓN**, (1) the pointed end of a tool used in watery strata, *see* **cono** (1); (2) gad, *see* **cuña** (1); (3) mech. punch, *see* **contrapunzón**, *comp.* **botador** (1), **sacabocados**.

**PUQUIO**, Peru, (1) **puquios**, Nazca, narrow galleries driven by the Incas or Jesuits to penetrate water-bearing strata, and made of arched walls of dry stone roughly hewn and wedged together (F. G. Fuchs), *comp.* **manantial**, **pozo** (1); (2) natural outlet of the waters of the subsoil (underflow) in lands of slight declivity; (3) tech. intersection of the surface of the ground with the waters of the subsoil (underflow); there are **puquios temporales** and **puquios permanentes** (Bol. del C. de I. de M.).

**PURGADOR AUTOMÁTICO**, apparatus for depriving steam of its water of condensation (Fr. **purgeur**).

**PURGAR**, Mex. to blow off a boiler (Dwight).

**PURUÑA**, (1) S. Am. a long trough for vanning silver amalgam (**Venator**); (2) Peru, a flat dish, of unglazed red earthenware or of wood,

7 to 8 inches in diameter, for making tests in the *patio* process, *syn.* *chuga*, *comp.* *batea*, *poruña*.

**PUZOL, PUZOLANA, PUCELANA**, *pozzuolana* or light-coloured tufa used for making hydraulic cement, *comp.* *peperita*.

**QUEBRADA**, (1) ravine; if deep = *barranca* (2); (2) top. narrow and rough pass, deep pass, *see* *paso* (4); (3) fissure or break in stratified rocks, open vertically as well as horizontally, but completely independent of the planes of stratification (Molina), and sometimes lined with crystals, or filled with water, clay, etc., *see* *soplado* (1), *comp.* *hendedura*; (4) broken, uneven ground; (5) Span. Am. a stream, the affluent of a river, and flowing between two slopes (*faldas*) more or less precipitous (Muñoz); a stream flowing in a gully or ravine—it is rather more than an *arroyo* (1), and less than a river (*río*), *comp.* *amagamiento*, *cañada* (2); (6) a commercial failure.

**QUEBRADERO**, *see* *quebrantador*.

**QUEBRADOR**, Mex. (1) ore-breaker or cobber, *see* *apartador* (1); (2) sledge used in cobbing, *see* *martillo*, *u.* *pico* (3), *comp.* *golpe* (2).

**QUEBRADURA**, ravine, *see* *barranca* (2).

**QUEBRANTADOR, QUEBRANTADORA**, (1) stone-breaker or ore-crusher, *syn.* *chancador*, *chancadora*, Mex. *coche* (3) or *cochina* (1), *machacadora*, *machadora*, Mex. *machucador*, Tol. Col. *marrano* (4), Mex. *quebradero*, *quijada* (1), *rompepiedras*, *see* *lengua* (2), *palanca* (5), *u.* *placa*; (2) bor. tool used for breaking up stones, etc., equiv. Fr. *casse-pierre* or *bonnet carré*.

**QUEBRANTADURA**, *see* *quiebra* (1)

**QUEBRANTAMIENTO**, *see* *quiebra* (2).

**QUEBRANTAR**, to crush, break up or spall ore, *syn.* *quebrar*.

**QUEBRANTO**, *see* *quiebra* (1).

**QUEBRANTURA**, ravine, *see* *barranca* (2).

**QUEBRAR**, to cob, break or crush ore, *see* *quebrantar*.

**QUEBRAZÓN DE VETA**, Mex. break in a vein (Dwight), *comp.* *quiebra* (2).

**QUEDAR TRASCONEJADOS**, S. E. Sp. said of miners who are shut off from the rest of the mine by a fall of ground (Molina). NOTE.—*Trasconejarse* = to squat: applied to game pursued by dogs (Velázquez).

**QUEMA, QUEME**, Mex. (1) in the *patio* process, the roasting of the ore, *see* *tostación*; (2) Guadalcázar, S. L. Pot., calcining of mercury ores in clay retorts, *see* *calcinación*, *mercurio* (2); (3) retorting amalgam, *see u.* *evaporación*; (4) *metal de q.*, Peru, sulphide ore.

**QUEMADERO**, Mex. (1) retort-furnace, used in the *patio* process, for distilling the quicksilver from the *pella* (2); (2) burning-place.

**QUEMADO, DA**, pp. of *quemar*; *plata quemada*, burnt silver.

**QUEMADO**, Mex. any dark, cindery-looking mineral encountered in a vein or mineral deposit, generally manganiferous (Chism), *see* *quemazón*.



**QUEMADOR**, Mex. (1) the burner or director of the **magistral** (Lyon) ; (2) Guadalcázar, S. L. Pot. calciner of mercury ores, *see* **mercurio** (2).

**QUEMADURA**, (1) burning ; (2) burn (from an explosion, etc.).

**QUEMAR**, (1) to roast ore, *see* **tostar** ; (2) to calcine ore, *see* **calcinar** ; (3) to retort amalgam, *see* **evaporar** ; (4) **q. piedra**, to heat a stone and then drop it in water, in order to break it up easily ; (5) to blast a hole, *see* **tirar** (1).

**QUEMAZÓN**, (1) Pachuca, Hid. Mex. the upper zone of the silver ores in which the matrix consists of a mixture of minerals wherein manganese ores (psilomelane, pyrolusite and wad) predominate ; silver occurs in this zone as native, or as chloride, or chloro-bromide—it is a var. of **colorados**, *comp.* **pinta azul** ; (2) Peru, outcrop (Dwight), *see* **afloramiento**.

**QUEME**, *see* **quema**.

**QUEÑUA**, Chile, a resinous tree, used as fuel (combustible), *comp.* **yareta**.

**QUESOS** (cheeses), Mex. in the **patio** process, small cakes (**tejos**) of silver, resulting from smelting the sulphides [**polvillos** (3)] with litharge [**greta** (2)] in small clay furnaces or **vasos** (1), *see* **plancha** (1).

**QUICIAL**, jamb of a door or window, *see* **jamba**.

**QUICIO**, (1) hinge of a door ; a but-hinge, *see* **bisagra** ; (2) prop, support, *see* **apoyo** ; (3) Ant. Col. timb. sole-piece, *see* **solera** (3) ; (4) mech. bracket plummer-block ; collar of a shaft or pivot (Ponce de León), *syn.* **rangua**, *comp.* **chumacera**.

**QUIEBRA**, (1) the breaking up of ore, whether by hand or machinery, *syn.* **quebrantadura**, **quebranto** ; (2) a fault [*see* **falla** (1)], fracture or break in rocks, etc., *syn.* **quebrantamiento**, *comp.* **hendedura**, **quebrazón** ; (3) a depression in a **cordillera** or in a **cuchilla** (1), and generally comprised between two mountains [**cerros** (1)] or peaks [**picos** (6)] (Muñoz), *comp.* **terrontera**.

**QUIEBRAHACHA**, (1) *see* **jabí** ; (2) Cuba, a kind of fir.

**QUIJADA** (jaw), (1) rock-breaker, *see* **quebrantador** ; (2) **quijadas**, jaw-plates of (1) ; (3) **quijadas**, *see* **ensamblado**.

**QUIJO**, gangue or vein-rock [**matriz** (1)] generally quartzose, *comp.* **panizo** (1) ; **q. azucarado**, Hualgáyoc, Peru, very small transparent hexagonal crystals of quartz, covering crystals of barytes (Santolalla) ; **q. podrido**, Lima, Peru, porous quartz often containing gold.

**QUILATADOR**, assayer of gold or silver, *see* **ensayador**.

**QUILATAR**, to assay gold or silver, *syn.* **aquilatar**, *see* **ensayar**.

**QUILATE**, (1) degree of purity of gold or precious stones ; (2) carat or twenty-fourth part of gold under assay or estimation, thus gold of 22 quilates contains  $\frac{2}{24}$  of pure gold ; (3) carat (for precious stones), the 140th part of an ounce or 205 mg. (Acad.) = 3.077 grains in weight ; (4) a weight of 4 **granos**, the third part of a **tomin** or the 144th part of an ounce.

**QUIMBALETE**, *see* **bimbalete**.

**QUINTA**, country seat, country house.

**QUINTAL**, (1) one hundredweight or Spanish centner, a weight of 100 lb. Spanish or 4 arrobas = 101.444 lb. avoird. or 46.0246 k.; the quintal of Castile = 101.61 lb. avoird.; q. métrico, 100 k.; (2) fifth part of 100.

**QUINTAL**, Braz. village, *see* **aldea**.

**QUINTO**, Span. Am. a tax on mines, established by Ferdinand and Isabella of Spain, and originally a fifth or 20 per cent.; in Mexico reduced to a tenth (**diezmo**) and, later, to 3 per cent.; in Colombia reduced to one-tenth, one-fifteenth, one-twentieth (*see* **veinteno**), and, in some cases, to one-twenty-first. In 1755 the tax for the right of melting and marking (**cobos**) was 2 per cent., afterwards reduced to 1 per cent. In 1777 the rights of **quinto** and **cobos** were reduced to 3 per cent. (V. Restrepo), *see u. derecho* (2).

**QUINUAL**, Peru, a tree used for timbering, for duration, *see u. lanche*.

**QUITAPEPENA**, Mex. a guard who stands at the door of the adit or mouth of the shaft to see that no stolen ore is carried away by the miners, etc., *see* **guardaminas** (1).

**QUITA Y PON**, mech. adjustable, removable, *e.g.*, rieles de q. y p., auxiliary rails used at the heads of inclined planes.

**QUITZALITZTLI**, Mex. According to Clavijero, the Aztec name for the nephritic stone (**piedra nefrítica**) or jade, *see* **jade**, *comp. chalchihuitl*.

**RABERÓN**, the top of a felled tree, cut for firewood (Velázquez), *see* **leña**.

**RABLE** (from Fr.), scraper, *see* **legón**.

**RABOS** (tails of animals), Ant. Col. at the Zancudo mine, tailings [colas (7)] are treated in settling-vats, **cabeceras** from the first are coarser and richer in gold, **medios** from the second are finer and show more silver, while **rabos** from the third produce slimes richer in silver (H. F. Granger and E. B. Treville).

**RACHA**, Port. fissure, *see* **hendedura**.

**RACHAS**, large split pieces or branches of timber, used for lagging [revestimiento (1)], making sollars [plataformas (1), tapestles (1)], etc., *see u. astilla* (1), *comp. raja* (1).

**RADIACIÓN**, radiation; **vetas en r.**, veins radiating from a common centre, *comp. u. reticulado*.

**RADIANTE**, **piedra r.**, actinolite.

**RADIO**, radius; **r. de protección**, radius of protection [against subsidence (**revenimiento**)—Gonot's rule].

**RADOCHÍN**, Col. lead, iron or rubber rings or washers used for pipe-joints, *see* **empaquetadura** (2).

**RAEDERA**, semicircular rake for collecting mineral at surface or underground, *comp. azadón* (3); met. rake, *see u. rastro*.

- RAFA**, (1) inclined plane cut in rock to support an arch, *see u. arranque* (2), and *fundamental*; (2) subsidence (Venator), *see revenimiento*.
- RAÍZ**, *see u. propiedad*; bienes raíces, landed property.
- RAJA**, (1) splinter, chip of wood; rajas, Mex. (half-round) lagging, *see revestimiento, comp. rachas*; (2) crack or fissure, *see hendedura*.
- RAJADURA**, prov. cleft, fissure, *see hendedura*.
- RAJO**, Chile, large chamber wrought in a deposit, *see casarón*.
- RAMA**, (1) bough or limb of a tree, *syn. gajo* (1); ramas, timb. small branches, *comp. latón* (2), *ramo* (1); (2) branch road, branch railway, branch vein, *see ramal* (3), *ramo* (2).
- RAMAL**, (1) ramales, strands of a rope, *see cordón* (2); (2) principal passage in mines, *see galería*; (3) branch or off-shoot of a vein, branch vein, *syn. Mex. contracajón or cuerpo* (5), *rama* (2), *ramita, ramo* (2), *veta ramal*; (4) Villanueva del Rio, Sevilla, Sp. upper half of an inclined plane, *see u. meter*.
- RAMALEARSE**, to split into branches (of a vein), *see ramificarse*.
- RAMBLA**, (1) a sandy place or ground covered with sand after floods (*avenidas or crecientes*), *comp. arenal*; (2) a ravine or water-course which carries off the water of heavy rains, *see barranca* (1) and (2).
- RÁMEOS**, Chile, zones of spotted ores (copper) separating the rich zones (Fuchs and De Launay), *comp. clavo* (2).
- RAMIFICACIÓN**, (1) division of a lode into branches; (2) r. arqueada, transp. the reunion of an *encuentro* (2) and a *bifurcación* (2).
- RAMIFICARSE**, to split up (of a lode), *syn. ramalearse* (Fr. *se ramifier*).
- RAMITA**, r. de filón, branch or leader of a lode, *see ramal* (3).
- RAMO**, (1) branch of a bough or limb, *comp. rama* (1); limb cut off from a tree; (2) branch of a road, railway or vein, *see rama* (2), *ramal* (3).
- RAMPA**, (1) winning or stoping face, end or breast, *see frontón* (1); (2) arco en r., arco rampante or por tranquilo, rising or descending arch; (3) inclined plane, *see plano* (3).
- RAMPLÓN**, Mex. upright (Lyon), *see montante* (1).
- RANA**, transp. frog or railway frog (or section of rail at a point where one line leads to two branches), *syn. Mex. sapo, comp. corazón* (2).
- RANCHERÍA**, Span. Am. collection of huts, like a hamlet.
- RANCHO**, (1) an estate or property; (2) Mex. a farm or detached farmhouse and ground (Pac. ranch); *see hacienda* (1).
- RANGUA**, pivot-collar, shaft-socket, *see quicio* (4).
- RANURA**, groove, *syn. rebajo* (4); rabbet; r. y lengüeta, carp. groove and tongue; mech. slot, *see embrague* (3), *muesca* (1).
- RANURADOR**, grooving-plane (Ponce de León).
- RAPASA**, a stone very soft and easy to work (Velázquez).
- RÁPIDOS**, rapids of a river (Ponce de León), *see raudal*.
- RASA**, high and clear mountain plain (Acad.), *see llano*.
- RASANTE**, line of street or road considered in its inclination or parallelism with regard to the horizontal plane (Acad.); rail. elevation of outer rail in curves (Molina).



**RASCAR**, to scratch (of *buscones*) on the surface of abandoned mines, *see raspadores*.

**RASGO**, Tasco, Guerr. Mex. obs. length of underground workings along the strike (MS. 1793), *see cuele* (2).

**RASO**, SA, adj. vulg. smooth (*liso*), applied to barrel of winch, etc.

**RASPA**, (1) coarse file or rasp, *see lima*; (2) Mex. in ores containing both gold and silver, when mercury is put in the *arrastre* (3), the amalgam, etc., obtained by scraping the bed, *syn. raspadura*. The scrapings are washed in a *chuza*.

**RASPADORES**, Mex. name given to people who scrape or scratch on the surface of veins or other deposits (Brackel-Welda), *syn. tepuqueros*, *see buscones, rascar*.

**RASPADURA**, scrapings, *see raspa* (2).

**RASPAR**, (1) to scrape, to remove amalgam from the *arrastre* (3) by scraping; to scale a boiler; (2) Mex. to clean up an *arrastre* (3), *see contraraspas*.

**RASPOSO**, Comanja, Jalisco, Mex. ore containing native silver, generally massive (*en pegaduras*), dendritic or in very small grains (Ramirez), *see plata* (2).

**RASTRA**, (1) sledge, *syn. narria, trineo*; *acarreo por arrastre* (1) or *por rastra*, conveyance or transport by sledging (Fr. *trainage*), *see patín* (1); (2) act of dragging along; *una r. de leña*, a load of firewood (dragged by mules).

**RASTRERO**, *see u. cable* (1).

**RASTRILLO**, *see u. rastro*.

**RASTRO**, rake used in mining loose deposits, *comp. azadón* (3); *rastrillo*, small rake for stirring ore in furnaces; *see raedera, rastrocriba*.

**RASTROCRIBA**, screen rake used in washing (Molina), *see rastro*.

**RASTRÓN**, Mex. a Chilian mill (Chism), *see chileno*.

**RATA** (rat), Mex. candle-boy (Dwight), *comp. abajador*.

**RATO** (he-mouse), *sistema de r.*, Mex. ancient method of mining or burrowing.

**RAUDAL**, torrent, rapid stream; *raudales*, rapids of a river, *syn. chor-rera* (4), *rápidos, reciales*, *see cabezón* (2).

**RAYA**, (1) frontier, *see frontera*; (2) Mex. day's pay (Dwight), *see jornada* (2); (3) Mex. the time worked by the *barreteros*, and marked with circles, semicircles, strokes (*rayas*), and half-strokes, representing dollars, half-dollars (*tostones*), reales and medios (Dahlgren); the pay-roll, *see memoria* (1); (4) *tienda de r.*, *see u. tienda*.

**RAYADO**, DA, pp. of *rayar*; *metal rayado*, Peras, Oaxaca, Mex. greasy quartz with stains of oxide of iron in the form of bands, veins and zones (Ramirez)—is gold-bearing, *see oro, comp. u. acerado* (1) and *guija* (2); *paradas rayadas*, *see u. parada* (3).

**RAYADO**, Mex. day-labourer, *see jornalero*.

**RAYADOR**, Mex. the grass-captain, clerk or accountant, who distributes candles, powder, tools, etc., and marks the *raya* (3), *see capitán*.

**RAYAR**, Mex. to pay off (Dwight) ; **rayarse**, to register after work [done] in the mine (Dwight).

**RAYO**, (1) spoke of a wheel, pulley, etc. ; **rayos**, spokes or web of a car-wheel, *see* **polea** (3) ; (2) radius of a circle ; (3) ray of light ; *see u. enlace* (2).

**RAZONABLE**, *see u. azogue* (2).

**REACTIVO**, chem. reagent, *see* **magistral**.

**REAL**, adj. royal, *see u. hacienda* (1).

**REAL** (1) **r. de minas**, Mex. mining district, *syn.* **asiento** (4) **de minas**, mineral (4) **de minas**, **realito**, *comp.* **campo** (6), **comarca** (1), **distrito** (1) ; " by Real de Minas was understood those places in which there existed a town already established with church, vicar or curate, Royal Judge (Judge of Mines), and Deputies of Mining, six mines in operation, and four reduction-works " (E. M. Baca) ; with the increasing prosperity of the mines the **reales** were converted into **pueblos** or towns, thus Guanajuato **real** was established in 1554, obtained the title of town in 1619, and of city on the 8th of September, 1741 ; (2) **Huelva**, Sp. a gallery driven parallel with the lode (J. Allen), or along the strike (Molina), forming a **galería de dirección** ; (3) **r. de agua**, a portion of water which can pass an aperture the size of a **real** (4) ; the **real fontanero** of Sp. = 135·2016 litres per hour (Duque) ; in Madrid = 3 cubic inches per second (Acad.) ; (4) **Span. Am.** a coin, one-eighth of a dollar or  $12\frac{1}{2}$  cents ; in some parts of S. Am. =  $\frac{1}{10}$  or 10 cents ; for values in Sp. consult Acad. and Velázquez ; (5) **real de oro**, Col. half a **tomín**, 16 **reales** = 1 **castellano**.

**REALCE** (raised work), (1) rising drift (Venator) ; any working-place that is raised (**que realza**) above the haulage road ; rise at one end of a horizontal cut in order to stope down the next upper cut (Molina) ; *see* Fig. 66 (after Moncada), equiv. Fr. **relevage**, *comp.* **contracielo** ; (2) **labor de r.**, Linares, Almagrera, Mazarrón and Cartagena, Sp. overhand stoping, *see* **testero** (3) ; **r. lateral**, method of stoping (overhand) wide veins, one-half or one-third being stoped first, beginning on the footwall side, *comp.* **rebajo** (2) **lateral**.

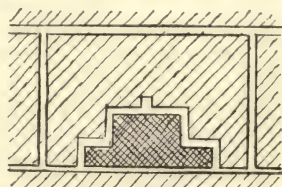


FIG. 66.—Realce (1).

**REALITO**, *see* **real** (1).

**REATA**, cord or leather strap joining two or more horses, etc., drawing in line ; **reatas**, Mex. cords [**cuerdas** (1)] about as thick as the finger or larger, used for lashing cargo, *comp.* **rejo** (3).

**REATILLA**, Mex. a single twisted rope, smaller than the **reata**.

**REBABA**, projecting piece of stone in a wall, etc. ; mortar crowded out between stones and bricks ; chipped edge of sawed timbers or planks (Velázquez).

**REBAJADO, DA**, pp. of rebajar, *see u. arco*.

**REBAJAR**, to stope underhand, *syn. Mex. desbordar*.

**REBAJE**, *see rebajo*.

**REBAJO**, (1) Mex. (rebaje) working out or mining deposits, *syn. desfrute, comp. arranque* (1); *r. del cielo*, overhand stoping, *see u. testera* (3) (2) underhand stoping, *syn. explotación por gradas derechas*, labor de rebajo (or rebaje), Mazarrón, Sp. labor de zanjas or trabajo de zanjeo, labor en bancos (2), trabajo de banca (2) or de banco (2); for underground stope, *see u. grada* (2); *r. lateral*, stoping (underhand) wide veins, one-half or one-third being stoped first, beginning on the foot-wall side, *comp. realce* (2) lateral; (3) Mex. (rebaje) a winze or staple, *see clavada*; (4) a groove in timber or stone for joining same, *see ranura*.

**REBANADA**, slice of mineral, rock, etc.

**REBATIDO**, *see u. tajo* (4).

**REBO**, Port. gravel, *see cascalho* (1).

**REBOLLUDO**, *see u. diamante*.

**REBOLO**, *see u. muela* (4).

**REBORDE**, flange, *e.g.*, of a piston, of cast-iron tubing, of a wheel, *syn. brida* (3), *see cuello* (4), *pestaña*, *rodete* (2), *solapa* (1).

**REBOSADERO** (place where anything overflows), (1) overflow waterway of a reservoir, dam, etc., *syn. vertedero* (1), *vertiente* (4); *vía de escape*, waste weir; (2) Peru, gold-placer, *see placer*; (3) crest of a vein (Elwes), *see crestón*; (4) irregular deposit or pocket; "rebozaderos (*sic*) ó impregnaciones de la roca con cierta irregularidad á una distancia considerable de la grieta ó paso de los minerales" (Bol. del I. G. de M.), *syn. Mazapil*, Zac Mex. *bufa* (2), *see masa* (3); (5) stockwork, *see cúmulo* (2).

**REBOTALLEROS**, Mex. according to Gamboa, those who search for ore on the dumps (*terreros* or *desmontes*), *see pallaco*, *pallaquear*, *comp. buscones* (1) and (2).

**REBÚSCADOR**, *see buscador*.

**RECALCONES**, jerks given to the rope in hoisting with a winch (Moncada).

**RECALENTADOR**, superheater, *e.g.*, used in Piccard's method of obtaining salt, *see calorífero*.

**RECARGOS**, Chile, charges on nitrate or caliche (1).

**RECAUDACIÓN**, collection of taxes.

**RECEPCIÓN**, a plat, *see cóncava*.

**RECEPTADORA, RECEPTORA**, el. motor as distinguished from dynamo or generator (*generatriz*).

**RECEPTOR**, receiver; *r. del aire*, air-chamber of an air-compressor; *r. hidráulico*, hydraulic receiver, *see recipiente*.

**RECEPTORA**, *see receptadora*.

**RECHANO**, Port. plain on the top of a mountain (Elwes), *see meseta* (2).

**RECHAZADO, DA**, pp. of rechazar; *veta rechazada*, dislocated vein, *see rechazo*.





- RECHAZO** (rebound), Ant. Col. deviation of a lode caused by a fault [falla (1)], *comp.* **salto** (1).
- RECIAL**, rapids (of a river), *see* **raudal**.
- RECINCHO**, Villanueva del Rio, Sevilla, Sp. hard sandstone (*arenisca*), fine-grained and containing pyrite, occurring in the coal seam (Molina), *comp.* **soleta**.
- RECIO**, IA, adj. coarse ; **mena recia**, *see u.* **mena**.
- RECIPIENTE**, receiver, *see* **receptor** ; **r. de aire**, pump. condenser **r. del pozo de desagüe**, sump. (Venator), *see* **caja** (2).
- RECOCIDO**, the operation of annealing metals (Velázquez).
- RECODO**, (1) bend of a river, *see* **retuerta** ; (2) refuge-hole (Chalon).
- RECOGEDORES**, *see* **lazador** (2).
- RECOGER**, to gather, pick (of ores), collect.
- RECOGIDA**, oro de r., Ant. Col. gold composed of that from different mines in small portions (Uribe), *see* **oro**.
- RECONCENTRADOS**, Mex. concentrates, *see* **concentrados**.
- RECONOCER**, to search for minerals, veins, etc. ; to prospect, costean.
- RECONOCIMIENTO**, (1) exploring, searching, prospecting, *see u.* **trabajo** (2) ; (2) survey, inspection ; (3) Mex. in the **patio** process, verifying the results obtained, *see* **empleo**.
- RECOPIACIÓN**, abridgment or collection of laws ; **R. de Indias**, Mex. under early Spanish domination, the code of the Indies, which included various laws and dispositions relating to mining, *see* **código**.
- RECORRER**, (1) surv. to traverse ; (2) mech. to travel, sweep (Ponce de León), (3) to repair (machinery, etc.).
- RECORRIMIENTO**, surv. traversing as distinguished from triangulation (Molina).
- RECORTAR**, (to cut away, pare off), to regulate or dress the sides of a shaft, etc., *syn.* **igualar**.
- RECORTE**, (1) dressing the sides of a shaft, etc. ; equalising a face after a shot (Molina) ; (2) transversal de r., Asturias, Sp. cross-cut, *see* **crucero** (1) ; (3) transversales de r., Palencia, Sp. *see u.* **transversal** ; (4) vent. equalisation ; (5) **recortes**, Ant. Col. mech. prep. blanketings, after being washed on an inclined table or frame, and before going to the **arrastre** (3), *comp.* **marmaja** (2) ; (6) **recortes**, mech. prep. skimmings, “skimpings” or “toppings” (Venator), *see* **desecho** (2).
- RECASTADO**, DA, adj. and pp. of **recostar** ; **veta recostada**, inclined vein, *see u.* **echado**, da ; for **testeros recostados**, *see u.* **testero** (3).
- RECASTAR**, (to recline), to dip, *see* **inclinarse**.
- RECOVA**, **RECUA**, Port. drove or gang of horses or mules.
- RECOVAGEM**, Port. conveyance of goods on mules.
- RECOVAR**, Port. to drive pack-horses or mules.
- RECOVEIRO**, Port. mule-driver.
- RECTIFICACIÓN**, rectification or correction (of a mining claim).
- RECTO**, TA, adj. straight, erect ; **bancos rectos**, underhand stopes, *see u.* **banco** (2) ; **montón recto**, *see u.* **montón** (3).

- RECUBRIMIENTO**, la superficie de r. de una válvula, the superficial part of a valve, which rests on the seat [*asiento* (2)].
- RECUESTE**, *see* *recuesto*.
- RECUESTO** (Mex. *recueste*), (1) declivity, slope, *see* *pendiente* (1); for tiro de recueste, *see* *u. tiro* (1); (2) inclination or dip of a vein, *see* *echado*.
- RECUPERACIÓN**, recovery.
- RECUPERADOR, RA**, adj. aparatos recuperadores, recovery apparatus.
- RED** (net); una r. de filones or de vetas, a network of veins, a stockwork, *see* *cúmulo* (2).
- REDUCCIÓN**, Mex. reduction (of number of mining claims), *comp. amplificación*.
- REFACCIÓN, REFECCIÓN**, Span. Am. repair (of a mill, building, etc.), *see* *remiendo*, *reparo*; *pieza de r.*, repair-piece.
- REFACCIONAR, REFECCIONAR**, Span. Am. to repair; r. un molino, to repair a mill, *see* *remendar*, *reparar*.
- REFACCIONERO**, Mex. the helper of a rock-drill operative (Dwight), *comp. hapire* (2).
- REFECCIÓN**, *see* *refacción*.
- REFECCIONAR**, *see* *refaccionar*.
- REFINACIÓN**, refining, *see* *afinación*.
- REFINADOR**, refiner, *see* *afinador*.
- REFINADURA**, refining metals, etc., *see* *afinación*.
- REFINAR**, to refine (metals), *see* *afinar*.
- REFOGA**, Peru, retorting amalgam, *syn. refogue*; distilling free sulphur from sulphides.
- REFOGAR**, Peru, to retort amalgam, *see* *u. evaporar*; to distil sulphur from sulphides.
- REFOGUE**, *see* *refoga*.
- REFORZADO, DA**, adj. strengthened, *see* *u. cápusla* and *viga*.
- REFORZAR**, (to strengthen), to re-timber a level, etc., *see* *entibar*.
- REFORZE**, re-timbering, *see* *entivación*.
- REFRACCIONARIA**, compañía r., *see* *u. habilitación*.
- REFRACTARIO, IA**, adj. met. refractory, *see* *revestimiento* (2).
- REFRIGERACIÓN**, cooling (Fr. *refroidissement*).
- REGA**, Braz. water-conduit or launder, *see* *caz*.
- REGADERA**, (1) boca de r., pump. snore-piece or strainer, *see* *boca* (8); (2) c.m. pick for deep undercutting, *syn. pica*, *socavadora de mano*, equiv. Fr. *rivelaine*; *regaderas mecánicas*, mechanical picks for coal-cutting; (3) mech. prep. sprinkler; (4) c.m. spraying, *see* *riego* (2).
- REGADURA**, (1) c.m. undercutting, undermining, holing, (N. Engl.) "kirving" or "binching under," *syn. desanche* (2), *socava*, *socavadura* (Venator), equiv. Fr. *entaillage*, Ger. *Schrämen*; (2) c.m. undercut (N. Engl.) kerf or kerfing, *syn. atarjea* (2), *descalce horizontal* or *inferior*, *entalladura* (1), *regadura*, *regola*, *reguera*, (quarr.) *roza* (2), *rozadura* (2). *socavado*, *tajea*, equiv. Fr. *havage*, *sous-cave*, Ger. *Schram*.

**REGALO**, present, bonus (to miners, etc.), *see* **gratificación**, **premio** (1).

**REGATÓN**, (1) Col. stone implement of the Indians found in the guacas, *see* Fig. 67 (after Angel); (2) Col. alluv. m. kind of chopper used in gold-washing; (3) socket, ferrule, *syn.* **casquillo** (3).

**REGENERADOR**, met. regenerator; *r. de fuerza*, pump. Bockholtz' regenerator.

**RÉGIMEN**, vent. when there is equilibrium between the air expelled and that introduced, or when the resultant of the centrifugal force and the atmospheric pressure equals zero (Molina).

**REGISTRADOR**, mech. registering apparatus, tell-tale (Ponce de León).

**REGISTRAR**, to register a title to a mine, *see* **registro**.

**REGISTRO**, (1) register, official entry or registration of the possession of a mine; (2) *r. de limpieza*, mudhole of a boiler, etc., *syn.* *boca* (7) or *orificio de limpieza*; (3) register or damper, *syn.* *llave* (2) *de humero*, *regulador de tiro* (4), *see* *columna* (10), *comalillo* (2); (4) pump. valve-door of a door-piece [*caja* (4)].

**REGLA**, (1) carp. rule, *syn.* *codo* (2); (2) *reglas*, surv. rods (generally of selected pine) used in measuring base of triangulation.

**REGLAMENTO**, regulation, ordinance; *reglamentos de la explotación de minas*, regulations or rules for working mines.

**REGLÓN**, (1) level used by mason, *see u. nivel* (1); (2) surv. vertical pole or upright of a measuring-rod.

**REGO**, Port. (1) furrow or trench, *see* *zanja* (1); (2) Braz. ditch or leat, *see* *acequia*.

**REGOLA**, c.m. undercut, *see* *regadura* (2).

**REGUERA**, c.m. undercut, *see* *regadura* (2).

**REGULADOR**, regulator; governor of a steam-engine (Fr. *régulateur*); throttle-valve of a locomotive; *r. de correas*, belt-tightener; *r. de presión*, *see* *acumulador*; *r. de velocidad de paletas* or *molinete* (5), regulator attached to brakes in automatic inclined planes—the float-boards (*paletas*) move in air or water; *r. volumétrico*, vent. volumetric regulator of Desailly and Dubois (1884); *see* *moderador*, *registro* (3).

**REGULAR**, adj. metal *r.*, Mex. average ore, ore of fair grade.

**REHABILITACIÓN**, rehabilitation, re-opening of mines, etc.

**REIS**, Braz. an imaginary coin of reckoning, *see* *milreis*.

**REJA**, (1) mech. prep. grate; battery-screen; grizzly (*parrilla* (2)); *r. móvil* or *de vaivén*, shaking-grate, *see* *criba*; (2) *rejas*, Mex. gratings which must be placed at all points of drainage tunnels where they connect with mine-workings on boundary-lines, etc.; (3) met. grate of a furnace, *see* *rejilla* (3).

**REJALGAR**, realgar [AsS].

**REJILLA**, (1) mech. prep. grizzly, *see* *parrilla* (2); sieve of a jigger, etc.; *see* *criba*; (2) *rejillas*, alluv. m. ripples, *see* *tendido* (5); (3) met. grate of a furnace [*horno* (2), *syn.* *parrilla* (1), *reja* (3), *see* *sabalera*,



FIG. 67.—Regatón (after M. U. Angel).



**REJO**, (1) pointed iron bar or spike ; (2) rim of iron put round the frame of a door to strengthen it ; (3) Col. rope made of raw hide, used for tying cargoes to mules, and for other purposes, *comp. u. reata*.

**RELÁMPAGO**, Mex. met. the brightening of the silver button during cupellation, *see vuelta* (3).

**RELAMPAGUAR**, met. to brighten, *see relámpago*.

**RELAVE**, second washing of ores ; *relaves*, residue left in a *batea* after a washing-test ; in the *patio* process, material remaining after washing the *torta*, *e.g.*, in Guan. heavy ore, abounding in pyrites, remaining attached to the amalgam, and which is hand-washed in large bowls, and then ground up again in an *arrastre* (3)—it yields a silver amalgam rich in gold (St. Clair Duport) ; the heavier and coarse matter deposited in settling-tanks, after treatment in *tinas* or vats, the *lomas* being the lighter slimes, and appears to be equiv. to the *cabecilla* (1) and *polvillo* (3) from the *arrastres* (3) ; Chile, residues left after the Chilean process of amalgamation.

**RELECES**, Col. mineral left behind by former working as being unprofitable.

**RELEJE**, Peru, supporting of mines, *see fortificación*.

**RELEJAR**, Peru, to support mines, *see fortificar*.

**RELEVO**, shift or core, or change of shift or core, (Cornw.) relief, *e.g.*, *r. de la tarde*, afternoon shift or core, back shift ; relief of wheelbarrowmen (Molina) ; *syn. campaña* (3), Mex. *cuarto* (3), *entrada* (2), *jornada* (3), *jornal* (3), *parada* (2), equiv. Fr. *journée*, *poste*, Ger. *Schicht*, *see* *dobra*, *doblar*, *endoble*, *nocheros*, *pueblo* (3), *punta* (1), *turno*.

**RELIZ**, (1) Mex. the bounding-plane between the vein and the "country"—the wall proper (*respaldo*) ; there may be several of these forming "walls within walls," or "walls beyond walls" ; "se ven los relices que constituyen los respaldos, adheridos á algunos fragmentos más ó ménos voluminosos, en lo general estériles, con alguna frecuencia mezclados con partículas de mineral muy diseminadas en la masa, y en algunos casos, ricos" (Ramirez)—the same author speaks of the filling being compact, or "cargada de relices" ; according to Louis Carrión = faces of separation of the different branches [*cuerpos* (3)] of a lode ; (2) Mex. land-slide, *see derrumbe* (2).

**RELLENA**, *see u. fractura*.

**RELLENAR**, to stow attle or deads, *syn. ativar*, *see echar* (2).

**RELLENO**, (1) mech. packing of pistons, pumps, etc., *see empaquetado* ; (2) stowing or packing, filling-in or filling-up, filling, *syn. ativación*, *explotación por rellenos*, *sistema por relleno*, equiv. Fr. *exploitation par remblais*, *remplissage à décombres*, Ger. *Versatzung*, *comp. retaque* ; (3) attle-packing, waste, gob or goaf used in (2), *syn. ativado*, Sierra de Cartagena, Sp. *atoro*, *atracado*, *rezago*, Mex. *trincha* (2), equiv. Fr. *remblais*, Ger. *Versatz*, *Bergversatz*, *see loritos*, *comp. desecho* (3) ; (4) *r. de un filón*, filling of a vein, *syn. caja* (14), Mex. *cuerpo* (4),

- llenamiento, masa (6) del filón, equiv. Fr. remplissage, Ger. Gangmasse ; (5) refilling of a vein, *i.e.*, secondary filling.
- RELUCIENTE, adj. clear ; Mex. fine-grained (of galena), *see u. liga* (2), plomo (2), soroche (2).
- RELUMBROSO, SA, adj. shining, glistening, *see u. liga* (2).
- REMACHAR, to rivet, *comp. roblar* ; remachado, da, pp. riveted.
- REMACHE, (1) riveting, *see robradura* ; (2) rivet, *see roblón*.
- REMACHÓN, buttress, *see contrafuerte* (1).
- REMANSO, smooth stagnant water or still pool of a river, “la parte quieta causado por el movimiento de las aguas que vuelven sobre sí mismos detenidas por algún obstáculo” (Muñoz), *see cadoso, comp. charco* (3), raudal, remolino (1).
- REMATE, (1) end, conclusion ; r. de cuentas, closing of accounts ; (2) highest bidding (at a public auction) ; (3) r. público, public auction, *see subasta*.
- REMENDADO, DA, pp. of remendar, patched, mended ; timb. a stull (estemple) is said to be de remendado when a head-piece or wedges are added to give it the necessary length (Molina).
- REMENDAR, to mend, repair, *see refaccionar, reparar* ; for piedra de r., *see u. piedra*.
- REMESA, remittance of money, bullion, etc., *see envío, comp. embarque*.
- REMIENDO, repair (of machinery, etc.), *see refacción, reparo*.
- REMISIÓN, the act of sending, Mex. shipment (Dwight), *see embarque*.
- REMOCIÓN, eng. earthwork (Chalon).
- REMOLEDOR, Pachuca, Hid. Mex. special grinding-pan of the Boss continuous system of extracting silver, *see tina* (2).
- REMOLINO, (1) whirlpool, *syn. olla* (3), vórtice, equiv. Port. redomoinho de agua, *see hoyo* (4), pozo (4) ; (2) mass or bunch of ore, *see bolsa* (1), clavo (2) ; Pampa de Navar, Peru, “in this plain there have been found extending over a surface of more than four English square miles, and immediately under the turf, immense masses of red gold ore and wire-like threads of pure silver. These are called by the Peruvian miners remolinos, clavos and vetas manteadas [*see u. veta* (1)], and they are overgrown by the roots of the Alpine grasses. . . . In the Chorpampa there has been found near the surface of the earth a rich mass of pure gold, spun round, as it were, with threads of silver” (Humboldt).
- REMONTAGEM, Ouro Preto, Braz. rise (J. L. Tonkin), *see contracielo* (1).
- REMOVEDO, met. stirring or rabbling.
- REMUDA, change or relay of mules or horses, *see parada* (1).
- RENDIDO, DA, pp. of rendir ; Mex. in the patio process, applied to the torta, when the amalgamation is concluded, *e.g.*, “la torta esta rendida” or “la torta ha rendido.”
- RENDIMIENTO, (1) yield or product, *see producto* ; (2) mech. efficiency, *e.g.*, r. dinámico, geométrico, manométrico, vent. dynamic, geometric,

manometric efficiency, respectively (equiv. to the co-efficient of useful effect of other machines).

**RENDIR**, to yield ; **rendirse**, in the **patio** process, said of a **torta** when the amalgamation is complete, *see u. rendido*, *da* ; **r. los humos**, Algamarca, Cajabamba, Peru, said of ores completely oxidised by roasting (Santolalla).

**REÑIDERO**, *see cernidero*.

**REÑIR**, *see cernir*.

**RENTA**, rent.

**REPARAR**, to repair, *see refaccionar*, *remendar*.

**REPARO**, repair of an edifice, machinery, etc., *see refacción*, *remiendo*.

**REPARTIDORA**, hydr. m. distributer, *see distribuidor* (4).

**REPARTO**, profit, return, *see beneficio* (2).

**REPASADERA**, carp. plane, *see cepillo* (1).

**REPASADORES**, Mex. in the **patio** process, men who mix the ores by treading in the mercury, or who drive the mules in that operation (**repaso**).

**REPASAR**, Mex. (1) in the **patio** process, to work **sal tierra** into the **lamero** (2), or magistral and quicksilver into the **torta** by treading with mules and men ; (2) **r. las válvulas**, pump. to examine and repair valves which leak, etc.

**REPASIRES**, **caballos r.**, Peru, horses used in the **repaso**.

**REPASO**, Mex. in the **patio** process, the mixing of the ore and quicksilver by treading in the **torta** ; the second treading is called **repaso fuerte**.

**REPECHO**, declivity, slope, *see pendiente* (1).

**REPISA**, bracket, *see silla* (3), **soporte** (2), *comp. can* (2) ; **r. de los sopletes**, met. tuyere (twyer) arch (Ponce de León), *see tobera*.

**REPOSADERO**, **REPOSADOR**, (1) Mex. a black soft and porous stone in the bed [**asiento** (8)] of the smelting furnace (Gamboa) ; (2) **r. exterior**, met. receptacle or reservoir for molten metal, etc., in front of a furnace, the float ; the contents of the fore-hearth (**antecrisol**) are tapped into this, *syn. depósito* (10) **de colada**, **fondo** (2), **pileta** (2), Mex. **vaso** (5), *comp. marmita* ; (3) "sole" or bottom of the crucible [**crisol** (2)] or hearth of a blast-furnace, *syn. fondo* (4) ; (4) in the **patio** process, settling-tank, *syn. chuza*, *see u. estanque* (3).

**REPOSAR** (to rest), Mex. in the **patio** process, the resting of the **torta** after the **incorporo** (Dr. Percy).

**REPRESA** (1) dam, *see presa* (1) ; **r. encofrada**, coffer-dam, *syn. ataguía*, **malecón** (3), *see caballo* (9), **cerco** (5), **tapón** (3) ; (2) **represas**, mech. prep. riffles, *see tendido* (5).

**REPRESAR**, to bank, sluice, dam.

**REQUIEBRO**, (1) breaking-up of ore after exploitation (Molina) ; (2) Almaden Sp. medium (quicksilver) ore, *comp. metal* (4), **china** (2), **vacisco**. NOTE.—According to Barinaga, **requiebro** (2) and **china** (2) are synonymous.

**RESALTOS**, mech. prep. riffles, *see tendido* (5).



**RESBALADERO**, ore-shoot, *see* **paso** (2).

**RESBALADO**, geol. overlapping, *see* **sobrepuesto**.

**RESBALAMIENTO**, **RESBALÓN**, (1) mech. sliding [*see u.* **pendiente** (1)], slide, slip, *see u.* **válvula**; skid (of wheels); (2) geol. sliding, as of one rock over the other, fault or slide; overlap fault, *see* **salto**; (3) **planos de r.**, geol. slickenside; (4) **veta de r.**, vertical lode.

**RESBALARSE**, to run side by side (of two veins).

**RESBALO**, Ec. a very precipitous hill (Velázquez), *see* **cerro** (1); abrupt slope (Ponce de León), *see* **pendiente** (1).

**RESBALÓN**, *see* **resbalamiento**.

**RESCATADOR**, (1) Mex. orig. middle-men who bought up ores at the mouth of the mine, reducing them in **haciendas** of their own. Funds were provided by capitalists, on condition of receiving the silver produced at a rate considerably below the mint or market price—known as **avío á premio de platas** (Ward); ore-buyer, *syn.* Peru, **maquilero**, *see* **rescate**, **rescatín**.

**RESCATAR**, Mex. to buy ore.

**RESCATE**, Mex. (1) orig. ransom received from the Indians; in 1519 Law 1st, Title XXII., Book IV., orders that the gold of ransom received (**rescate**) from the Indians in manufactured pieces be assayed, certified, marked and charged with one-fifth to the Crown (E. M. Baca); (2) public sale of ores; ore-buying agency; in mines which sell their products the various lots of ore are spread out [**tendidos** (4)] in the **patio** (1), so that the ore-buyers (**rescatadores**) can see them. The sale is made to the best bidder (**postor**) of those who come to the **rescate**; they make their offers to the administrator in private, who announces the result in a loud voice—**paradas** (3) **de busca** have the option of selling their allotted portions of ore to the mine-owners, or of taking it away (Bol. del I. G. de M.); (3) division of ore among the workmen (**barreteros**), *see u.* **partido** (2).

**RESCATÍN**, Span. Am. one who buys of Indians their small collections of ore (Velázquez), *see* **rescatador**.

**RESECOS**, Santa Eulalia, Chih. Mex. earthy carbonates of lead (Dahlgren), *see* **plomo** (2); dry ores (Dwight).

**RESERVAS**, (1) reserves of mineral, ore-reserves, *syn.* **minerales colgados**; (2) Almaden, Sp. name given to the columns of ore left between two masses of masonry [**obras** (3)].

**RESERVATORIO**, **RESERVORIO**, reservoir, *see* **estanque** (1).

**RESGUARDO**, (shelter) Mex. pent-house used at the bottom of a shaft in re-sinking, *see* Fig. 68 (after Luis Carrión), *syn.* **fondeo**, **tapón** (2) equiv. Fr. **appentis**, **solives de protection**, Ger. **Schutzbühne**, **Schussbühne**, *see* **guante**, **tlascal**.

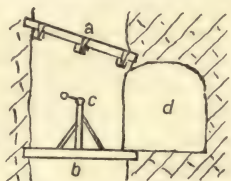


FIG. 68.—Resguardo (after Luis Carrión).

*a*, resguardo; *b*, contra resguardo; *c*, torno or burro; *d*, ventanilla or despacho.

**RESIDUO**, (1) waste from picking ore, final sludge from tin-dressing (Cornw. gatchers), etc., *syn.* **resto** ; (2) chem. residuum ; (3) **r. aluvial**, geol. alluvial detritus (Ponce de León).

**RESINITA**, (1) a fossil resin ; (2) hydrated quartz (A. del. M. de F.), *see* **cuarzo**.

**RESORTE**, mech. spring, *syn.* **muelle** (1) ; mech. prep. spring-buffer of rolls (Dwight), *see* **cilindro** (4) ; **r. de tirabuzón**, **r. de Belleville**, hoist. springs fixed above cages to neutralise the effects of sudden jerks, *see* **u. abrazadera** (2), and **muelle** (1).

**RESPALDO** (back or fore-part of anything), wall of a vein, etc., *syn.* **caja** (13), *see* **hastial** (1), **lado**, **pared** (3), **reliz** (1), *comp.* **guarda** (1) ; **r. alto** or superior, hanging-wall (Ger. **Hangende**) *see* **alta** (1) ; **r. bajo** or inferior, footwall (Ger. **Liegende**), *see* **bajo** (3). NOTE.—The term **respaldo**, like the equiv. term “wall” in English, is often applied to the wall-rock [Ger. **Nebengestein**—*see* **roca** (4)] or “country” adjacent to the vein ; strictly speaking, however, it is the bounding-plane between the vein and the country, equiv. Fr. **éponte**, Ger. **Sahlband**, Ulme, *see* **reliz** (1).

**RESPIRADERO**, (1) vent. air-hole, air-shaft, *syn.* **sopladero** ; (2) pump. snore-hole ; (3) geol. blow-hole of a volcano through which sulphurous fumes are emitted.

**RESPIRADOR**, apparatus for breathing in bad air (Gillman), *see* **aeroforo**.

**RESQUEBRADURA**, **RESQUEBRAJADURA**, **RESQUEBRAJO**, fissure, *see* **hendedura**.

**RESTO**, residue, *see* **residuo** (1).

**RESUMIDERO**, Guerr. Mex. name given to limestone cavern, *syn.* **sótano**, *see* **cueva** (1). NOTE.—The above appears to be a corruption of **rezumadero**, dripping-place.

**RETACAR**, *see* **retaque** ; **r. camas**, Mineral del Oro, Mex. to fill in all open spaces behind lagging [**camas** (7)] with waste rock.

**RETAJAR** (to cut round), Mex. to put new stones in the bed of an **arrastre** (3).

**RETAQUE**, **operación de r.** Mex. in timbering shafts, laths (made of **medias viguetas**, the lower end being in the form of a bevel or **chaflán**), used in lagging, are forced in by hammering or by using a pile-driver, and all holes are filled in between the timber and the rock with **cabezas de viga** (L. Carrión)—is lagging and filling [**relleno** (2)] combined, *see* **revestimiento** (1). NOTE.—S. Ramirez appears sometimes to use the word as synonymous with **ataques** (2) or **deads**.

**RETARDO**, st. eng. back-lash (Ponce de León).

**RETÉN**, mech. detent, ratchet, catch, *see* **fiador** (2) ; for **llave de r.**, *see* **llave** (5).

**RETENIDA**, Mex. pillar in a stope (Dwight), *see* **pilar** (3).

**RETICULADO**, **DA**, adj. resembling network ; **filones en reticulados**, net-work of veins, *comp.* **radiación**.

**RETINITA**, retinite or pitchstone (**piedra pez**).

**RETIRADO**, pp. of *retirar*, to retreat ; *explotarse en retirado*, c.m. to work from the perimeter to the centre, to work out-bye or home, equiv.

*F. en retrait, avec piliers repris.*

**RETORTA**, retort, *see bomba* (5), *cántaro*, *u. cornamusa*, *huairuna*.

**RETRANCA**, (1) kind of crupper for cargo mules, etc. ; (2) Span. Am. brake of a wagon or railway-car, *see freno* (2).

**RETRANQUERO**, Span. Am. brakesman, *see frenero*.

**RETRETA**, *see echar* (1).

**RETUERTA**, a bend or turn in rivers, etc., *see recodo* (1).

**REVENIDERO**, Ant. Col. (1) apparent alteration of "country" by the infiltration of water (Uribe) ; (2) the loose, clayey, boggy and wet part of a formation, arising from the slow infiltration of water from the interior of mountains (Muñoz) ; quicksand, (*arena movediza* or *arenas acuíferas*).

**REVENIMIENTO**, partial sinking in of the land [*terreno* (1)] of a mine (Acad.), subsidence, surface movement or draw, *syn. Mex. cata* (5), *descenso*, *rafa* (2), *zanja* (2) equiv. *Fr. affaissement*, *Ger. Pinge*, *see buzón* (6), *campana* (9), *chupón* (3), *embudo* (3), *u. radio*, *soplidos*, *u. tajo* (3), *comp. hundimiento* (3).

**REVENTADERO**, (1) rough, uneven ground, of difficult access (*Velázquez*) ; (2) outcrop, *see crestón*.

**REVENTARSE**, to blast successfully, *i.e.*, without miss firing, *comp. tirar* (2).

**REVENTAZÓN**, L. Cal. Mex. outcropping (Lucas), *see crestón*.

**REVENTÓN**, (1) road or path very much inclined, and fatiguing to surmount ; (2) *reventones*, Chile, masses of native silver (Fuchs and De Launay), *see plata* (2).

**REVERBERACIÓN**, calcination or roasting in a reverberatory furnace, *syn. reverbero* (2), *see calcinación*, *tostación*.

**REVERBERAR**, Mex. to roast (Dwight), *see tostar*.

**REVERBERO**, (1) reflector, *see pantalla* (2) ; (2) *see reverberación* ; (3) *horno de r.*, reverberatory furnace.

**REVÉS**, mech. back-stroke (Ponce de León).

**REVESTIMIENTO**, (1) any lining or covering (*Fr. revêtement*), whether of wood, stone or metal, used in mines ; *r. de piedra*, (*a*) stone-work or walling, *see mampostería* (2), (*b*) stone-tubbing or coffering, *see encubado* (1) ; *r. de pozo* (1), steining a well ; *r. de pozo* (2), steining or ginging a shaft ; *r. impermeable*, tubbing, *see encubado* (1) ; *r. metálico*, metallic lining or support ; *timb. lagging*, *syn. Col. dema* (2), *entibación con estacas* or *tablas*, *Mex. forro* (3), *Pachuca, Hid. Mex. guarda* (3), *Mex. guarnición* (1), equiv. *Fr. garnissage*, *Ger. Verschiebung*, *see atiz*, *bastones*, *caillapos*, *costero* (1), *costilla* (4), *encamación* (1), *encofrado* (1) and (2), *guarnición* (1), *orillaje*, *piso* (7), *rachas*, *raja*, *retaque*, *timba* (1), *vara* (4), *varejón*, *zarzo* (1) ; (2) met. lining of converters [*see u. forro* (1)], furnaces, etc. ; *r. refractario*, refractory lining, *see paramento* (2) ; (3) *muro de r.*, *see u. muro* (1).



- REVESTIR**, to line a shaft or level with wood, etc. ; *r. con costeros* (1), to line with slabs, to lag, *see encofrar*.
- REVISADOR**, (1), examiner of ore and waste separated by miners, *syn. celador* ; (2) examiner or inspector of machinery ; man over the *palanqueros* (2).
- REVISOR DE CUENTAS**, auditor, *see u. contador* (1).
- REVOCAR**, to plaster or whitewash, *see blanquear*.
- REVOCO**, *see revoque* (2).
- REVOLTURA**, (1) Mex. the mixing of the ore with fluxes, etc., before putting them in the furnace, constituting the charge, smelting or furnace charge or mixture, *syn. revolturón*, *see u. carga* (4) ; (2) the frequent stirring of mineral in desiccation or calcination.
- REVOLTURÓN**, *see revoltura* (1).
- REVOQUE**, (1) act of whitewashing ; (2) plaster, whitewash, *syn. revoco*, *see u. lechada*.
- REZAGA, REZAGO** (remainder, residue), (1) ore left in a mine ; (2) waste or goaf, *see relleno* (3) ; (3) *see grancero*.
- REZAGADO**, Mex. piled up (Dwight).
- REZUMADERO**, *see u. resumidero*.
- RÍA**, mouth of a river, *see desembocadero*.
- RIACHUELO, RIATILLO**, rivulet, stream, small river, *see caño* (3).
- RIBAZO**, *see u. ribera*.
- RIBERA**, shore of the sea ; bank of a river, *syn. banda* (4), *borde* (1), *márgen*, *orilla* (1), equiv. Port. *barranceira*, *see playa* (1). NOTE.—Steep banks of rivers are called *ribazos*.
- RIBERO**, bank or parapet of a dam, *see presa* (1).
- RIEGO**, (1) irrigation ; (2) c.m. laying coal-dust by means of a sprayer or diffuser, *syn. regadera* (4), *rociada* ; (3) *riegos*, Ant. Col. fragments separated from the outcrop (*crestón*) of a deposit, which have become rounded by the declivities of the ground, and which serve as guides to the *monteadores* or *buscadores* of veins (Uribe) ; float, shode (shoad) or shoad-stones of Cornw. Engl., *syn. derrame* (4) *de veta*, *riegos rodados*, *rodados* (1) or *suelos*, equiv. Ger. *Findlinge*, *Felsblöcke*, *comp. rollo* (2).
- RIEL**, (1) small bar or ingot of crude gold, silver or copper, *see barra* (3) ; (2) transp. rail, *see carril*.
- RIELADO, DA**, adj. reduced to ingots ; applied to gold, silver or copper.
- RIELERA**, met. mould for ingots of gold, silver or copper, *syn. Mex. ladrillera* (2), *lingotera*.
- RIFLES**, (from Engl.), S. Am. riffles, *see tendido* (5).
- RIGOLA**, mech. prep. labyrinth (Ponce de León), *see laberinto* (1).
- RIMERO**, a pile or string of gads (Ger. *Riemen*), etc.
- RINCÓN**, inside corner of a wall, building, etc., *comp. esquina* ; *chimenea de r.*, *see u. chimenea* (4), Fig. 22.
- RIÑÓN**, (kidney), (1) kidney-shaped mass of ore ; in Mex. reniform tin ore (wood tin) is called *riñón* or *estaño de r.*, *see u. bolsada* (3), *guijoles*, *comp. bolsa*, *nido*, *nódulo* (2), *criaderos en riñones*, *see u.*

**criadero** ; (2) Ant. Col. point in which the ore of a mine appears very abundant, *syn.* **nódulo** (2).

**RÍO**, river, stream, *see* **amagamiento**, **arroyo** (1), **cañada** (2), **quebrada** (5).

**RIOLITA**, (1) rhyolite, *syn.* Durango, Mex. **piedra acanterada**, *see u.* **mocheta** ; according to James D. Dana a quartzophyric var. graduates towards and into obsidian (**obsidiana**), through pearlite and pitchstone (**piedra pez** or **retinita**) ; (2) Guadalcázar, S. L. Pot. Mex. **guadalcazarite** in grains, associated with cinnabar, contains 5 to 12 per cent. of mercury, *syn.* **metal fierroso**, *see u.* **hierroso**, *sa.* H. F. Collins says it is possibly a mixture either of guadalcazarite, or possibly of onofrite, with other substances ; it is steel-grey, with red streak, occurs in sheets and pipes, in gypsum and limestone, and between these two rocks, *see* **mercurio** (2).

**RIOSTRA**, (1) a strut, *e.g.*, timb. a strut supporting a vertical timber, *see* Fig. 58, *comp.* **jabalcón** (2), **tornapunta** (1) ; (2) the backlegs of a pulley-frame (Gillman), *see* **tornapunta** (4) ; (3) Zac. Mex. timb. a stull (**estemple**) usually inclined—the one below is called **cumbrera** (3), *see* Fig. 49.

**RIOSTRAR**, to strengthen by means of oblique posts or struts.

**RIPIA**, b. constr. shingle, *see* **tejamanil**.

**RIPIAR**, to fill up the chinks of a wall with small stones and mortar ; to cover over chinks, etc., of underground walls with clay or lime, *syn.* **enripiar**.

**RIPIO**, (1) **ripios**, mas. rubble, *see* **mampuesto** (1) ; (2) transp. ballast material, *see* **balasto** ; (3) Mex. fragments of stones placed between the stones forming the bed of an **arrastre** (3) ; quarr. fragments, waste, *see u.* **escombro** (1) ; (4) spoil or *débris* of coal ; (5) **ripios**, Ant. Col. attle, *see* **desecho** (3) ; (6) Ant. Col. spalled ore ; (7) Ant. Col. small ore from the mine ; (8) **ripios**, Chile, residues obtained in evaporating **caliche** (1), in the system called **paradas** (5), etc., *comp.* **borra** (6).

**RÍQUITRUM**, Cartagena, Sp. mech. prep. hand-jig (Moncada), *syn.* **criba de cajón**, c. inglesa, **criba móvil manual**, Mex. **harnero** (2), *see* **harnero**, **palanquín**, **tinanco**.

**RISCO**, (1) a steep rock, crag, *see* **peñasco** ; (2) **riscos**, Mex. (quartz) crystalline in part, but opaque, and in part formed of grains in the manner of a cauliflower, of a yellow or white colour (Gamboa) ; amorphous quartz found in veins or outcrops (Chism), *see* **cuarzo** ; (3) Villanueva del Rio, Sp. country-rock, *see* **roca** (4).

**ROBADO**, DA, pp. of **robar** ; **veta robada**, Ant. Col. a vein which, on exploitation, shows indications of having been worked before, to a large extent (Uribe).

**ROBÍN**, rust of metal, *see* **orín**.

**ROBLAR**, to clinch a nail, to rivet, *comp.* **remachar**.

**ROBLE**, oak-tree (*Quercus robur*), *see* **encina**.

**ROBLÓN**, a rivet, *see* **remache** (2).

**ROBRADURA**, clinching, riveting, *see* **remache** (1).

**ROCA**, (Port. *rocha*), (1) rock, standing out from the general surface, *see* *madre* (6), *peñasco*; (2) rock or stone, whether in the ordinary or geological sense, *see* *borrasca* (2); (3) vein or bed of hard rock or stone, dike, *syn.* *filón de r.*, *see* *dique* (5); *r. verde*, Guan. Mex. dikes of diorite; according to P. Laur, the miners consider the proximity of these to veins to be a good indication for the richness of the latter; (4) *r. de los respaldos*, country or country-rock, *syn.* Mex. *armadura* (5), *caja* (15) *del criadero*, Mex. *panino* (1), Chile and Peru, *panizo* (2), Col. *peña* (5), Mex. *piedra bruta* (*a*), Villanueva del Rio, Sp. *risco* (3), *r. de caja* (15), *r. de los hastiales* or *del terreno*, *tehuilote* (2), *tepetate* (5), *terreno* (3), equiv. Fr. *roche encaissante*, Ger. *Nebengestein*, *see u. montaña* (2); (5) *r. madre*, gangue, *see* *matriz* (1); (6) alluv. m. bed-rock, bottom, (Cornw.) *fast*, *syn.* Chile, *cerca* (or *circa*), Peru, *loza* (2), Col. *peña* (4), *see* *cascajo* (2), (5) and (6); (7) *r. falsa*, alluv. m. false bed-rock, *syn.* Col. *peña* (6) *falsa*, *see* *cangalli*, *lama* (5).

**ROCILLA**, drift of pebbles, washed together by floods or currents; talus of rocks (Velázquez).

**ROCE**, friction, *see* *fricción*, *frotación*.

**ROÇEIRO**, Braz. farmer, *see* *hacendado*.

**ROCIADA**, **ROCIADURA**, **ROCIAMIENTO**, sprinkling, spraying, *see* *riego* (2).

**ROCHETA**, *see u. barrillar*.

**RODA**, Port. wheel, *see* *rueda* (1).

**RODADO**, **DA**, adj. round; *canto rodado*, pebble, *see u. canto* (3); *movimiento rodado*, Andalusia, Sp. a uniform movement given to rope in hoisting men up or down the shaft (Molina); *piedra rodada*, any round stone or rock, *see* *guijarro* (1).

**RODADO**, (1) piece of mineral, loosened from the vein, and scattered naturally in the soil—float, *syn.* *suelto*, *see* *riego* (3); (2) nugget, (Elwes), *see* *pepita*.

**RODADURA**, rolling, *see u. pendiente* (1) and *transporte*.

**RODAJA**, (1) small wheel, *see* *rueda* (1); (2) a ring of india-rubber or other material for forming a joint between pipes, etc., washer, *see* *empaquetadura* (2).

**RODAJE**, transport by wheel; *galería de r.*, rolley-way.

**RODELA**, (shield), *see u. concentrador*.

**RODETE**, (1) horizontal water-wheel (Ponce de León); (2) mech. wheel-flange or shoulder (Ponce de León), *see* *reborde*; (3) c.m. wedging-curb or -crib (Molina), *syn.* *corona* (4), *r. de asiento*, *r. fundamental*, equiv. Fr. *trousse picotée*, Ger. *Tragekranz*, *Keilkranz*, *comp. rueda* (4).

**RODEZNO**, (1) water-wheel with curved buckets and vertical axle, an impulse-wheel, *see* *rueda* (1); (2) toothed-wheel in grist-mills, *comp. corona* (3).

**RODILLO**, wooden roller for moving heavy weights along, *syn.* *polín*; roller used in rope haulage, etc. (Fr. *rouleau*), *see* *rollete*, *rollo*; *r. atesador*, tension-roller; *r. de fricción*, friction-roller, *see* *molinete* (3).



- ROEDURA** (gnawing), corrosion ; attrition ; geol. erosion (*erosión*).
- ROELA**, round piece of crude silver, gold, etc., *comp.* **plancha** (1).
- ROER**, to erode, *see* **gastar**.
- ROJO, JA**, adj. red ; for **tierras rojas**, *see u.* **tierra** (3).
- ROLDANA**, (1) pulley-wheel or sheave, *see* **polea** (1) ; (2) hoist. pulley, *syn.* **rondana** (1), *see* **polea** (2).
- ROLLETE**, roller, *see* **rodillo** ; mech. tumbler (Ponce de León).
- ROLLIZO, ZA**, adj. round ; adema **rolliza**, round timber, *see* **rollizo**.
- ROLLIZO**, round timber ; by **rollizos** is generally understood poles of pine, usually barked, but not hewn (Moncada), *see* **fajado** (3) ; **medio r.**, half-round timber.
- ROLLO**, (1) roller or drum ; **r. de portacable**, Mex. bearing-drum of cable-tramway (Dwight), *see* **rodillo** (1) ; (2) smooth, round and long stone, found frequently in **arroyos** and rivers (Guim), *see* **guijarro** (1), *comp.* **riego** (3) ; (3) coil of fuse, *see* **rueda** (5).
- ROMANA**, (1) steelyard, *syn.* Mex. **r. de gancho**, *see* **caja** (26), **u. fiel**, **pilón** (2) ; **barra de la r.**, beam of ditto ; (2) any large weighing-machine on the steelyard principle, *e.g.*, **r. de bascula**, platform scale, **r. de plancha**, charging scale (Dwight).
- ROMPEDERA**, chisel or punch for hot iron, *see* **cincel** (1).
- ROMPEPIEDRAS**, stone-crusher, *see* **quebrantador**.
- ROMPER**, (1) to break or crush ore, etc. ; (2) to pierce, penetrate ; to communicate or break through, *see* **rompimiento**.
- ROMPIMIENTO**, communication made between any two given points in a mine, etc., breaking through ; cutting across (Venator), equiv. Ger. **Durchschlag**.
- RONCADERA**, (1) trompe or water-blast, *see* **trompa** (1) ; (2) *see u.* **válvula**.
- RONCADOR**, Almaden, Sp. overseer, overman, *see* **sobrestante**.
- RONCO, CA**, adj. *see u.* **plomo** (3).
- RONDANA**, (1) hoist. pulley, *see* **roldana** (2) ; (2) Mex. gasket, or packing for pistons, etc., *see* **empaquetado** ; (3) Mex. washer, *see* **empaquetadura** (2).
- RONGUEROS**, Algamarca, Cajabamba, Peru, men and boys who carry the **capachos** (2) (Santolalla), *see* **hapipe**.
- ROSA**, (1) rose diamond, *see* **diamante** ; (2) *see u.* **círculo** (1).
- ROSARIO** (rosary), (1) chain-pump, *see u.* **bomba** (1), **cadena** (6) ; (2) beaded vein (Fr. **filon en chapelet**), or stratified deposit of similar form (**bolsadas estratificadas**) ; (3) **extracción en r.**, *see u.* **extracción** (1).
- ROSCA**, (1) screw, *syn.* **tornillo** (1) ; for thread of a screw, *see* **filete** ; **r. de Arquímedes**, mech. prep. screw-conveyor, *see* **rueda** (2) ; (2) Mex. blast. a ring or washer of **jarcia** put round the drill, when water is present ; (3) in the **patio** process, silver left, after retorting ; (4) in the **patio** process, the button (**botón**) of silver obtained in the **tentadura**.
- ROSETA**, met. rosette copper.

**ROSICLER** (bright rose colour), (1) ruby silver, *syn.* *rosiclara*; *r.* *claro*, proustite [ $3\text{Ag}_2\text{S} + \text{As}_2\text{S}_3$ ] or light ruby silver; *r.* *negro*, stephanite, *syn.* *plata agria* (c); *r.* *oscuro*, pyrrargyrite [ $3\text{Ag}_2\text{S} + \text{Sb}_2\text{S}_3$ ] or dark ruby silver, *syn.* Potosí, Bol. *rosicler*; *see* *nochistle*, *petlanque*, *plata* (2); (2) *r. de cobre*, Chile and Peru, cuprite, *see u.* *cobre* (2).

**ROTATORIO, RIA**, adj. *see u.* *bomba* (1).

**ROYA**, *see u.* *chimenea* (4).

**ROYO**, = *mesa* (1) *de arroyo*.

**ROZA**, (1) á *r. abierta*, *see u.* *cielo* (3); (2) *see u.* *regadura* (2).

**ROZADURA**, (1) friction, *see* *fricción*; (2) c.m. undercut, *see* *regadura* (2).

**ROZAMIENTO**, (1) friction, *see* *fricción*; (2) geol. attrition, *see* *atrición*.

**RUANA**, *see* *manga* (1).

**RUBÍ**, (1) ruby, a var. of spinel [ $\text{MgO} + \text{Al}_2\text{O}_3$ ], *syn.* *jacinto* (5) *oriental*, *rubín*; *r.* *espinela*, spinel ruby, *see* *cabujón*; *r.* *rosado*, balas ruby (balaje), *see* *scravoneta*; (2) *r. de estaño*, Dur. Mex. ruby tin, or a red crystalline var. of cassiterite (W. R. Ingalls), *see* *estaño* (2); (3) *r. de Bohemia*, rosy quartz, *see* *cuarzo*; (4) *r. del Brasil*, red topaz, *syn.* *topacio del Brasil*.

**RUBIADO, DA**, adj. *see u.* *vena* (2).

**RUBÍN**, ruby, *see* *rubí* (1).

**RUBIO**, Bilbao, Sp. limonite or brown hematite; *rubio* "has mostly the cellular and concretionary character so familiar to those who are acquainted with the Northamptonshire ores, although in places it is quite compact and bedded" (J. D. Kendall); for *r. avenado*, *see u.* *vena* (2), *comp.* *campanil*.

**RUEDA**, (1) wheel, *see* *rodaja* (1), *rodete* (1), *rodezno* (1) and (2); *r. de cabillas*, sprocket-wheel; *r. de cangilones*, Persian wheel; *r. de cuenta* (4), pulley, head-wheel; *r. de engranaje recto*, spur-wheel; *r. de espigas*, tenon-wheel, pin-wheel, tumbler; *r. de levas*, cam-wheel; *r. de molino*, mill-wheel; *r. dentada*, cog-wheel, *see* *platillo* (3); *r. de trinquete*, ratchet-wheel; *r. hidráulica*, water-wheel; *r. hidráulica de abajo*, undershot water-wheel; *r. hidráulica de arriba*, de *artesas*, de *cajones* or *por encima*, overshot water-wheel; *r. hidráulica de costado*, breast-wheel; *r. Pelton*, Pelton wheel; for parts of a wheel *see* *anillo* (6), *camón* (1), *cubo* (3), *llanta* (1), *pina* (2), *rayo* (1); (2) *r. de hélice*, mech. prep. screw-conveyor, *see u.* *rosca* (1); (3) *see u.* *espeque* (1); (4) *r. de apeo*, timb. crib or curb, or circular frame of wood, pinned or screwed together, to serve as the foundation for the bricking of a shaft, equiv. Fr. *rouet de cuvelage*, Ger. *Kranz*, *comp.* *rodete* (3); (5) *r. de mecha*, blast. coil of safety-fuse, *syn.* *rollo* (3); (6) *ruedas*, Taviches, Oax. Mex. rounded masses of silver ore, *see* *plata* (2).

**RUGOSIDAD**, *see* *aspereza*.

**RUMBADERO**, Ant. Col. ore-pass or -shoot, *see* *paso* (2).

**RUMBEADORES**, Mex. persons who search for lodes, *see* *buscones* (1).

- RUMBO**, (1) rhumb, a point of the compass, equiv. Port. *rumo* ; (2) road, route, way, *see* *camino* (1) ; (3) strike or direction, *syn.* *arrumbamiento*, *corrida* (2), *dirección* (1), *hilo* (1), equiv. Fr. *direction*, Ger. *Streichen* ; *r. de la veta*, line or direction of the vein ; (4) Almería, Sp. round-buddle (*Venator*), *see* *gandinguera*.
- RUMBÓN**, Col. (1) automatic inclined plane, *see* *plano* (3) ; (2) inclined shoot for ore or timber, *syn.* *rumbadero*, *see* *paso* (2) ; (3) casual crumbling away or mouldering (*desmoronamiento*) of the ground or formation (*Uribe*), *comp.* *derrubio*.
- SÁBADO** (Saturday), Sonora, Mex. a piece of mineral or ore of high grade, called so because *gambucinos* (1) were allowed to search waste piles on Saturdays.
- SABALERA**, met. iron grate or perforated arch for fuel in reverberatory furnaces (*Acad.*), *see* *rejilla* (3).
- SABANA**, (1) Span. Am. an extensive natural pasture plain, savannah, *see* *llano* ; (2) Ant. Col. an alluvial mine on the banks of a river, above the surface of the water, *comp.* *aventadero* (1), *cerro* (2), *saca* (5), *sobresabana*.
- SABANERA**, Col. diorite (*diorita*), *comp.* *guaracú*.
- SACA**, (1) exportation, *syn.* *exportación* ; *renta de sacas*, duty on exports, *see* *u. derecho* ; (2) extraction, *see* *extracción* (1) ; extraction of the pay-dirt or of gold from auriferous sands, etc. ; (3) Mex. ore raised from a mine in a given time, or output, *see* *extracción* (2) ; (4) Mex. ore-sack, *syn.* *costal*, *see* *saco* (1) ; (5) *mina de s.*, Col. an alluvial mine in which the pay-dirt is below the level of the neighbouring waters, so that pumps driven by hand or by water-wheel are necessary, or the water is taken out with *bateas* (*jamuración*), *syn.* *mina baja* or *de labor*, *comp.* *sabana* (2).
- SACABARRO**, blast. scraper, *see* *cuchara* (4).
- SACABOCADO**, **SACABOCADOS**, hollow punch, *comp.* *punzón* (3).
- SACADOS**, Ant. Col. filled-up stopes, *comp.* *chorrera* (1), *salón* (2).
- SACAMUESTRAS**, mech. prep. sampler ; *s. automático*, automatic sampler.
- SACAR**, (1) to extract ore, etc., from a mine, *see* *extraer* (1) ; *s. piedra*, to quarry, *see* *tajo* (3) ; (2) *s. agua*, to draw water, pump, *syn.* *sacar con bomba*, *see* *desaguar* (1), *extraer* (2) ; (3) *s. una letra*, com. to draw a bill of exchange ; (4) *s. la barredura*, *see* *u. barredura*.
- SACATE**, *see* *zacate*.
- SACO**, (1) sack or bag, *see* *bilca*, *bota*, *botilla*, *costal*, *manta* (1), *saca* (4), *talega*, *tenate*, *zaca*, *zurrón*. NOTE.—One *saco de ixtl* or *ixtle* (2) (fibre of the *lechuguilla*) will hold 5 to 6 *arrobos* of ore, *see* *u. trecho* ; (2) *criaderos en s.*, irregular sack-like deposits (*Molina*) ; *minas en s.* or *de s.*, Ant. Col. irregular deposits [*montones* (3)] of ore which fill superficial crevices or cavities, especially in cretaceous formations.



**SACUDIMIENTO**, shaking, *see u. mesa* (1).

**SAETIN**, flume of a water-wheel, *see caz*.

**SAFIRAS**, Braz. blue stones of topaz (Bauer), *see topacio* (1).

**SAGITA**, height, versed sine or rise of an arch (*arco*), *syn. flecha* (5).

**SAL**, (1) salt [NaCl]; *manantial de s.*, salt-spring; *mina de s.*, salt-mine, *see salero* (1); *s. blanca*, Salinas de Torre Vieja, Alicante, Sp. washed salt, *s. común* or *s. roja* = unwashed salt; *s. de agua*, salt crystallised from water; *s. de Colima*, salt from Colima, Mex. used for domestic purposes on account of its purity; *s. de compás*, *s. de roca*, *s. gema*, *s. pedrés* or *s. piedra*, rock-salt; *s. de primera delgada*, *s. de primera de grano grueso*, *s. de segunda* or *de beneficio*, three classes of salt produced from the Salinas del Tapado, Zamorcha, S. L. Pot. Mex.; *s. de manantiales*, brine-salt; *sal de tierra* or *saltierra*, Mex. salt mixed with earthy impurities, or salt earth from *lagunas*, containing 12 to 13 per cent. of salt, and formerly used for mixing in the *torta*—the *laguna* of Peñón Blanco (S. L. Pot.) deposits, by natural evaporation, chloride of sodium with a little sulphate of sodium, and other insoluble salts, as carbonates of lime and magnesium, oxide of iron, clay and sand (Ramírez); *s. gorda* or *en grumos*, clotty salt resulting from the quiet evaporation of brine in contact with a saturated gaseous atmosphere (Molina); *s. marina*, sea-salt; *s. mineral*, mineral salt for amalgamation; (2) chem. any salt which is a compound of a base and acid, *see fango* (2); *s. amarga*, or *s. de higuera*, epsom salt.

**SALA**, the principal room of a *hacienda*, or any other building, *see salón*.

**SALADAR**, small pool in which salt is evaporated in *marismas* (Acad.).

**SALAR**, Chile, saline deposit—may consist of salt, borax, etc.

**SALBANDA** (Fr. *salbande*), flucan, or more or less thin layer of clay, between the vein and the wall-rock, *see guarda* (1).

**SALCHICHÓN**, large saucisse; *s. de paja* (straw) or *de haz* (1) is sometimes used in spilling.

**SALERILLO**, vulg. iron or steel plate (*placa*) on which the pivot [*gorrón* (1)] of a horse-whim [*malacate* (1)] rests.

**SALERO**, (1) mine of rock-salt, *syn. mina de sal*; (2) Island of San Fernando, Sp. place where salt is piled up, *see tajería*.

**SALIDA DE CARBÓN**, coal outcrop, *see afloramiento*.

**SALIENTE**, c.m. hoist. sliding-piece of cage (Venator), *see abrazadera* (2)

**SALIERAN**, Mex. door of entrance (G. F. Lyon), *see puerta* (1).

**SALINA**, (1) salt-mine, *see salero* (1); (2) salt-pit or salt-works; (3) natural salt-lakes or -marshes, e.g., the "Salinas Grandes" of Argentina are vast salt-marshes situated on a high desert plateau, *see u. caliche* (1), *papa* (2), *comp. salnitrales*.

**SALINERO, RA**, adj. applied to ores requiring much salt in amalgamation.

**SALINERO**, dealer in salt; owner of salt-mines, *lagunas* or works.

**SALIPA**, Minas Geraes, Braz. sleeper (J. L. Tonkin), *see durmiente* (1).

**SALITRAL**, adj. nitrous, *see* **salitroso**, *sa*.

**SALITRAL**, (1) saltpetre beds or works ; (2) **salitrales**, N. Patagonia, Arg. salt-steppes (J. v. Sienoradzki), *comp.* **salnitrales**.

**SALITRE**, (1) saltpetre or nitrate of potassium, *syn.* **nitro** ; (2) Chile, nitrate of sodium, *see* **caliche** (1).

**SALITRERA**, Chile, nitrate deposit, *see* **caliche** (1).

**SALITRERO, RA**, adj. relating to nitrate of potash or soda.

**SALITROSO, SA**, adj. nitrous, *syn.* **salitral**.

**SALMA**, *see* **tonelada**.

**SALMER**, buttress of an inclined arch, or one which forms an inclined plane, *comp.* **contrafuerte** (1) ; **mueve** (from mover) *de s.*, in underground walling, said of an arch which rests on an inclined buttress or buttresses, *comp.* **cuadrado** (3).

**SALMUERA**, brine, *see* **muera**.

**SALNITRALES**, a district where glauber salt effloresces, *comp.* **salina** (3), **salitral** (2).

**SALÓN** (aug. of *sala*), (1) Mex. a cavern [*cueva* (1)] containing ore, a chamber-deposit, *syn.* **bóveda** (2), **bovedal**, Peru, **bovedón** (1), **criadero** (2), *see* **clavo** (2) ; (2) Mex. a chamber or bunch of ore which has been worked out, *syn.* **anchurón** (1), Peru, **bovedón** (2), Chile, **casarón**, *comp.* **chorrera** (1), **claro** (1), **comido**, **sacados** ; *s. de limpia*, *see* **caja** (18) and *u. limpia* (2) ; (3) Ant. Col. any place in the adit, spacious and well-disposed, made in order to facilitate and simplify the work (Uribe) ; (4) Col. the wider portion of a **guaca** (1).

**SALSEDUMBRE**, saltiness, degree of saltiness.

**SALTADURA**, quarr. hollow in surface of stone, due to a piece (*lasca*) having been chipped off.

**SALTAR**, *see u.* **tirar** (2).

**SALTARREGLA**, (1) false square (*escuadra*) ; (2) slide-rule.

**SALTIERRA**, *see u.* **sal** (1).

**SALTO** (leap), (1) fault or throw, slide, *syn.* **botamiento**, **desplazamiento**, **dislocación**, Ant. Col. **liso** (4) (slide), **resbalamiento** (1) or **resbalón** (slide), Mex. **vetilla** (slide), equiv. Fr. **rejet**, **rejettement**, **saut**, **ressaut**, Ger. **Sprung**, **Verwerfung**, *comp.* **falla** (1), *u.* **falso**, *sa*, **rechazo** ; *s. anormal*, reverse fault, throw or slide ; *s. normal*, normal fault, or throw ; *s. aparente*, a newer vein that meets an older one at an acute angle and follows its plane for a certain distance ; (2) *s. de un barreno*, a blast, *see* **tiro** (6) ; (3) *s. de agua*, waterfall, *syn.* **caída** (3) *de agua*, Sant. Sp. **pimplón**, **vertiente**, equiv. Port. **cachoeira**, Fr. **chute d'eau**, Ger. **Wasserfall**, *see* **cascada**, **catarata** (1).

**SALVAPOLEAS**, hoist. apparatus to protect pulleys against overwinding, etc.

**SANEAMIENTO**, vent. drilling holes in coal, and leaving new faces for a time, in order that the marsh-gas may drain away (Molina).

**SANGRADERA**, (1) the open channel in the side of a ditch or flume to let out the water when it is in excess, it is generally provided with a

- sliding-door, and is then known as flood-gate, sluice-gate, waste-gate, *syn.* **compuerta de esclusa**, **tablacho**, Aragón, Sp. **tajadera** (1), prov. **templadera**, *comp.* **trampa** (1); (2) met. tap-hole, *see* **bigote** (1), **piquera**.
- SANGRADURA**, draining of a canal or river; letting out the waste water of a ditch or flume, *syn.* **sangría** (1).
- SANGRAR**, (1) to drain a canal, river, ditch or flume; (2) *s.* **la torta**, Mex. in the **patio** process, to take away the water resulting from the **repasos**—done at night; (3) Mex. met. to tap a furnace, *see* **sangría** (4).
- SANGRERO**, Ant. Col. the **arriero** (generally a lad) who cooks and prepares meals on the road, *syn.* **sanguao**, *see* **atajador** (2), *comp.* **garitero**.
- SANGRÍA**, (1) letting off water by piercing a bank, dam, etc.; draining a canal, river or flume, *see* **sangradura**; (2) adit-level, *see* **socavón** (1); (3) Mex. cross-cut from shaft to vein (Dwight), *see* **crucero** (1); (4) met. tapping a furnace, *syn.* **colada**, *see* **sangrar** (3); (5) met. stream of molten metal that comes out of a furnace (Acad.).
- SANGUAO**, *see* **sangrero**.
- SANGUINARIA**, (1) blood-stone, of a dark green colour, variegated by red spots (Velázquez), *see* **dionisia** (1); (2) hematite, *see* **dionisia** (2).
- SANO**, whole or virgin ground, *see* **macizo** (1).
- SANO-SANO**, Challuma, Peru, a tree-fern through the roots and fibres of which auriferous fines are crushed (Sir C. Mansfield).
- SANTA BÁRBARA**! warning cry given when blasting drill-holes, *syn.* Sierra Almagrera, **barreno**! **fuego**! equiv. Ger. **angesteckt**! (= **encendido**!)
- SAPÉ**, *see u.* **taquára**.
- SAPO**, *see* **rana**.
- SAPONITA**, soapstone, *see* **jabón** (1).
- SARABIADO**, DA, adj. *see u.* **piedra** and **peña** (5).
- SARAPE**, *see* **serape**.
- SARDINA**, Mex. a cross-cut saw (Dwight), *see* **trozador**.
- SARDIO**, **SARDO**, sard or a deep brownish red chalcedony of a blood-red colour by transmitted light, *see* **cuarzo**, **sardonio**.
- SARDÓNICE**, **SARDONIO**, **SARDÓNIQUE**, **SARDÓNIX**, sardonyx or a stone consisting of sard (**sardio**) and white chalcedony in alternate layers, *see* **cuarzo**, **sardio**.
- SARTÉN** (frying-pan), Mex. pan for drying moisture samples (Dwight).
- SAÚCO**, elder or elder-tree.
- SCRAVONETA**, Port. ruby before being polished (Elwes), *see* **rubí** (1).
- SE ABRE**, miners' phrase, it widens or opens up (of a vein, etc.), *comp.* *se cierra*.
- SE ASOMBRE**, *see* **asombrarse**.
- SE BIFURCA**, it branches (of a vein).
- SEBO**, (1) tallow or suet, used for lubricating machinery, making candles, etc.; any kind of grease or fat, *see* **cebo** (6); (2) *s.* **mineral**, mountain tallow or hatchettite (related to paraffin in composition).
- SE BUFA**, *see* **bufarse**.



- SECA**, (1) drought, *syn.* sequía ; (2) secas, Mex. refined silver, *syn.* limadura (3) ; *see u.* seco, ca.
- SECADOR**, (1) apparatus for drying, *e.g.*, compressed air heated by waste steam, coal for briquettes ; (2) Mex. sample-drier (Dwight).
- SECADORA**, Ant. Col. a copper vessel in which the wet gold is deposited and dried before weighing it.
- SECCIÓN**, section ; section showing width and depth of a ditch, etc. ; section of a machine ; sectional drawing ; cross-section of a lode, etc. ; secciones de planchas de acero, sections (of machinery, furnaces, etc.) made of steel plates, *syn.* cascós.
- SE CIERRA**, miners' phrase, it narrows or closes up (of a vein, etc.), *comp.* se abre.
- SECO**, CA, adj. dry ; seco, Mex. in the patio process, said of gangue which is dry, *comp.* lamoso (2) ; *see u.* hierro (4), piedra, plata, seca (2), ulla ; veta seca, Ant. Col. a vein lacking water for its exploitation.
- SE CORTA**, miners' phrase, used when a vein is cut off by a dike, fault or mass of rock.
- SECRETARÍA DE FOMENTO**, Mex. Secretaryship or Department of Encouragement or Promotion, *see* Fomento ; Secretaría de Hacienda, Secretaryship of the Treasury.
- SECRETARIO**, secretary.
- SECTOR**, sector ; s. de Stephenson, Stephenson's link-motion.
- SEDIMENTO**, geol. sediment ; mech. scale or incrustation of boilers, etc.
- SE ENCUENTRA**, *see* encuentro.
- SE ENTREGA**, "la veta se entrega," Mex. a phrase used when the shaft strikes the walls of a vein (Ramírez), *comp. u.* sentarse.
- SEGULLO**, the first stratum of a gold-mine (Velázquez) ; the first earth met with in gold-mines (Guim) ; earth overlying auriferous deposits and indicative of gold (Lock), *see* oro, *comp.* montera (3) (overburden).
- SEGUNDO**, DA, adj. second ; segunda (clase), Pachuca, Hid. Mex. ore inferior to primera and superior to común, sold to smelting-works in the country.
- SEGUR**, large axe, *see* hacha (1).
- SEGURO**, (1) leave, license ; (2) insurance of goods on sea or land ; (3) mech. click, stop, detent, pawl, ratchet, *see* fiador (2) ; (4) safety-fuse, *see* mecha (2).
- SE HUNDE**, *see* hundirse.
- SEMIALTOS**, Tepezala, Aguascal. Mex. furnaces of medium size for smelting copper ore (S. Ramírez), *see* horno (2).
- SEMIÓPALO**, *see u.* ópalo.
- SEÑAL**, (1) sign, mark, token ; for señales de minas, *see* indicaciones ; (2) surv. mark, *see* machote ; (3) señales, signals.
- SEÑALAMIENTO**, surv. marking on the surface the position of underground workings, etc. ; s. de pertenencias, marking out claims.
- SEÑALAR**, (1) surv. to mark out claims, etc., on the surface ; (2) to signal.

- SENDA, SENDERO**, path, *see u. camino* (1), *trillo*, *trocha* (1), *vereda*.  
**SENO**, sine (of an arc).  
**SEÑORAJE**, duty paid to the lord, royalty ; *derecho de s.*, duty formerly paid to the King on the coining of silver or gold, *see u. derecho* (2).  
**SEÑORIAL**, Huancavelica, Peru, royalty paid by *busconeros* to owners of *pachamanca* furnaces, deducted from value of silver obtained, and sold to said owners (C. E. Velarde), *see derecho* (2).  
**SENTARSE** (*asentarse*), "s. en la veta," Mex. a phrase used when a shaft strikes a vein (S. Ramirez), *comp. se entrega*.  
**SENTAZÓN**, Arg. a slide or fall of rock or earth, *see derrumbe* (1).  
**SENTENCIA**, judicial decision, sentence.  
**SENTIDO**, s. del salto (1), direction of throw.  
**SEPARACIÓN**, (1) mech. prep. separation or classification ; sorting ; s. por el aire, dry classification ; (2) assay. parting.  
**SEPARADOR**, mech. separator ; s. de lodo, slime separator.  
**SEPARADORAS**, Guan. and Real del Monte, Mex. women who take picked ore [*pepena* (2)] from the *pepenadoras*, and pass it to the heap [*montón* (1)].  
**SEPARAR**, mech. prep. to separate, classify or sort.  
**SEPÉ**, Col. alluv. m. layer of porphyritic clay coloured by iron above the pay-dirt [*cinta* (3)] and below the *tosca* (3).  
**SE PIERDE**, miners' phrase, meaning the vein is lost or comes to an end, either longitudinally or vertically.  
**SEPTENTRIONALES**, veins having a north and south trend, *see u. legítimas*.  
**SEPULTURA**, *see guaca* (1).  
**SEQUÍA**, drought, *see seca* (1).  
**SERA**, large pannier or basket, generally without handles, for carrying charcoal, etc., *see canasta*.  
**SERAPE**, Mex. a narrow blanket, worn by miners, *peons*, etc., *syn. sarape*, *see u. vestido*, *comp. manga* (1).  
**SERENO, NA**, adj. hoist. a kibble is said to ascend *serena* when it does not oscillate much (Molina).  
**SERPENTEADO, DA**, pp. of serpenteate ; *veta serpenteada*, a vein which has a serpentine direction, or a very variable strike.  
**SERPENTÍN, SERPENTINA**, serpentine (rock or mineral), *see ollar*.  
**SERRA**, Braz. mountain, *see sierra*.  
**SERRANÍA**, ridge of mountains, hills, etc. ; any extension of land, generally craggy, composed principally of mountains and ridges (Guim), *see sierra* (1), *comp. barrero* (2).  
**SERRAR**, to saw, *see aserrar*.  
**SERRETA**, dim. of *sierra* (2).  
**SERRIJÓN**, short chain of mountains, *see sierra* (1).  
**SERRÍN**, sawdust, *syn. aserraduras*, *aserrín* ; s. de corcho, cork sawdust.  
**SERRINO, NA**, adj. belonging to chains of mountains.  
**SERROTE**, saw used in timbering, *see serrucho*.

**SERRUCHO**, hand-saw with a small handle, *see* **serrote**, **sierra** (2); **s. braguero**, pit-saw.

**SERVIÇO**, Port. service, labour; Braz. (alluvial diamond-mining), **s. do campo**, working on the side of a valley above the present high-water level; **s. do rio**, working of river-deposit; **s. do serra**, working plateau-deposit.

**SERVIDUMBRE**, service; leg. right of way or right of use, easement; Mex. right of way, right of aqueduct, right of drainage and right of ventilation; **s. de camino** or **de tránsito**, right of way.

**SETA** (mushroom), *see* **u. carril** (3); in a bridge rail, the rounded part = **seta**, while the flat portion = **patín**.

**SHAULA**, Minas Geraes, Braz. shovel (J. L. Tonkin), *see* **pá**, **pala**.

**SIDEROSA**, spathic iron, siderite or chalybite, *syn.* Potosí, Bol. cachí, **calamita** (3), **carbonato de hierro**, **espato de hierro**, **hierro espático**, Titiribí, Ant. Col. **marga** (2), Lináres, Carolina, Sp. **molinera**; argillaceous var. = **hierro arcilloso** (clay ironstone), *see* **piedra del águila** (*u.* **piedra**).

**SIDERURGIA**, metallurgy of iron.

**SIERRA**, (1) ridge or chain of mountains, *e.g.*, **Sierra Madre** is the name given to the main mountain-ridge of Mexico, equiv. Port. **serra**; *see* **guájaras**, **serranía**, **serrijón**; (2) saw (Port. **serra**); **s. abrazadera** or **s. bracara**, kind of bow- or frame-saw; **s. de ingletes**, tenon-saw; **s. de mano**, hand-saw or panel-saw, *see* **serrucho**—for frame *see* **codal** (1); **s. de punta**, fret-saw; **s. de trasdós**, fine-cutting saw strengthened with iron or brass along the back; **s. de través**, **s. de trozar**, cross-cut saw, *see* **trozador**; (3) **s. de agua**, saw-mill.

**SIETE** (seven), (1) carp. clamp, *see* **barrilete**; (2) Col. safety-fuse (? corruption of "safety"), *see* **mecha** (2).

**SIFÓN**, (1) syphon; (2) downtake of a blast-furnace (Dwight), *see* **horno** (2).

**SIL**, a kind of mineral earth, found in gold and silver mines, and which was used in the manufacture of yellow and red colours—it was a kind of mud (Guim); a kind of red ochre (Elwes); a kind of yellow ochre (Velázquez), *see* **ocre**.

**SILBATO**, whistle (of a steam-engine, etc.), *see* **chifle** (1), **pito**.

**SILLA** (chair), (1) saddle, *syn.* **s. de montar**, *see* **galápago** (1), **montura** (2); (2) a leather strap used as a protection by ore-carriers—it passes over the shoulders, *see* **vestido**; (3) mech. saddle, shafting-bracket or hanger (Ponce de León), *see* **repisa**; (4) geol. saddle, *syn.* **s. de una capa**, equiv. Fr. **selle** (if the fold is wide—if narrow = **crochon**), *see* **falda** (2), **ladera** (3), **planicie** (2), *comp.* **hondonada** (2).

**SILLAR**, square hewn stone; dressed ashlar, *syn.* **cantal** (3), **canto** (4), or **piedra de canto**, **morillo** (2) **tallado**, **sillar labrado**, *see* **sillarejo**, *comp.* **carretal**, **mampuesto** (1).

**SILLAREJO**, small hewn stone; small dressed ashlar, *see* **sillar**.



**SILLERÍA**, construction made of squared stones (*sillares*), placed one over the other, and in rows; ashlar-work, *see cantería* (2); *obra de s.*, ashlaring; *piedra de s.*, stone used for this purpose, *see u. fábrica* (2); *s. bruta* or *de piedra sin labrar*, ashlar rubble-work, *see mam-puesto* (1).

**SIMETRÍA**, symmetry; *s. simple*, simple symmetry of Von Cotta (banded structure); *s. múltiple*, multiple symmetry, *i.e.*, when a band of the same substance appears more than once in the same section of the vein.

**SISTEMA**, system of working (mines, quarries, etc.), *see labor* (3), *método*; *s. á cielo abierto*, quarrying, *see cielo* (3); *s. de rato*, *see rato*; *s. especial de laboreo*, special method of working; *s. por abandono de macizos*, method of abandoning pillars, etc.; *see hundimiento* (2), *u. pilar* (3), *relleno* (2); system of treatment; *s. de Cooper*, Chile, *tina* process.

**SITIERO**, Span. Am. small farmer.

**SITIO**, (1) Span. Am. small farm; (2) Mex. *s. de labor*, land-measure, 5000 varas by 5000 varas; *s. de ganado mayor*, 1 square league, or 4338-1123 acres (Dwight); *s. de ganado menor*, 3333 $\frac{1}{3}$  acres.

**SOBACO**, (armpit), Mex. timb. a method of joining timber, *see* Fig. 69.

**SOBARBO**, (1) mech. cam, *see cama* (3); (2) mech. tappet (Fr. *levier*); tappet of a stamp-mill (*bocarte*), *see leva* (2).

**SOBRANTE**, surplus, profit, residue.

**SOBRECARGA**, *see* Fig. 8, *u. arco*; *see u. cabuya*.

**SOBREGUÍA**, intermediate level, *see zapa*.

**SOBREPAGA**, extra pay.

**SOBREPRECIO**, extra price (obtained for metals, ores, etc.).

**SOBREPUESTO**, geol. overlapping of strata, *syn. resbalado*.

**SOBRESABANA**, Ant. Col. an alluvial deposit intermediate between *aventaderos* (1), and *labores bajas*, and higher than *sabanas* (2).

**SOBRESTANTE**, overseer, overman, shift-boss, below the "captain" (*capitán*), *syn. Mamarto*, Cauca, Col. *patrón*, *patrona* (if a woman), Almaden, Sp. *roncador*, equiv. Braz. *feitor*, *comp. capataz*, *curador* (1).

**SOBRESUELDO**, addition to one's pay or allowance.

**SOCABÓN**, *see socavón*.

**SOCARRA**, de *socarras*, Guan. Mex. opening up through a cave or run of ground [*derrumbe* (1)] (Luis Carrión).

**SOCAVA**, the act of mining or undermining (Neuman and Baretti); c.m. undercutting, *see regadura* (1).

**SOCAVADO**, c.m. undercut, *see regadura* (2).

**SOCAVADORA**, coal-cutting machine, coal-cutter; *s. de mano*, *rivelaine*, *see regadera* (2), *comp. perforadora*.

**SOCAVADURA**, c.m. undercutting, *see regadura* (1).



FIG. 69.

Sobaco.

**SOCAVAR**, to excavate, undermine ; e.m. to hole under, undercut or hew, *syn.* **descalzar** (1), **entallar**, equiv. Fr. **entailler**, haver, Ger. **unterschrämen** ; for **pico de s.**, *see u.* **pico** (2).

**SOCAVÓN**, (formerly spelt **socabón**), (1) Mex. adit or adit-level, drainage-level, (N. Staff.) gutter, (Derb.) sough, (Pennsylv. U.S.A.) water-level, *syn.* **contramina** (2), **galería** (1) de desagüe, **sangría** (2), equiv. Fr. **galerie d'écoulement**, **porte-eau**, Ger. **Stolln**, **Wasserlösungstolln** ; **s. á hilo de veta**, adit driven along the vein or drift ; **s. aventurero**, exploratory adit ; **s. crucero**, cross-cut adit. NOTE.—In Peru the term **socavón** appears to be confined to this class of adit. (2) Mex. any gallery, the mouth of which is at surface, *see* **galería** (1) ; **s. de entrada**, gallery used for ingress and egress ; (3) cavern or cave, *see* **cueva** (1) ; (4) **socavones**, large holes, pits or shafts, *see* **pozo** (2), *comp.* **hoya** (1).

**SOCHE**, cuero de s., chamois leather, *see* **gamuza**.

**SOCIEDAD**, society, corporation, company, partnership. *syn.* **compañía**, *see* **compromiso** (2), *u.* **habilitación** (1), *u.* **empresa** ; **s. accidental**, company not formally constituted ; **s. anónima**, joint-stock company, limited liability company ; **s. comanditaria** or **en comandita**, special partnership, in which some lend funds and others manipulate them in their private name ; **s. incorporada**, chartered company ; **s. por acciones**, stock company ; **s. regular colectiva**, general partnership, worked in name of some or all, all equally participating.

**SOCIO, IA**, adj. **veta socia**, a vein joined to another, companion-vein.

**SOCIO**, partner, shareholder, stockholder ; **s. comanditario**, sleeping partner (Ponce de León).

**SÓFITO**, soffit of an arch, *see* **intradós** (1).

**SOFOCADO, DA**, pp. of **sofocar** ; Mex. a mine is said to be **sofacada** when it is abandoned, on account of being drowned out, or from other causes, *see u.* **ahogado, da**.

**SOFOCARSE**, “la mina . . . se sofocó á los 900 pies” (Dahlgren), *see* **sofocado, da**.

**SOGA**, rope ; *see* **cable** (1), **cuerda** (1) ; Mex. the rope to which the **bota** is attached, *see* **soguilla** ; for the expression **cortar sogas**, *see* **cortar** (7).

**SOGUILLA** (dim. of **soga**), Mex. small rope for the **bota chica**, **botilla de burro**, or **manta** (1).

**SOL** (sun), (1) **veta al s.**, Ant. Col. a vein showing fragments of ore at the surface of the ground ; (2) Peru, one **peso fuerte** (hard dollar), value 2s.

**SOLAPA**, (1) mech. edge, flange, *see* **reborde** ; (2) mech. lap, overlap, *syn.* **falda** (3), **solapadura**, **traba** (1) ; (3) Ant. Col. bituminous schist (**esquistó**).

**SOLAPADURA**, mech. lap, *see* **solapa** (2).

**SOLAPAR**, to lap, overlap, *syn.* **traslapar**, *see* **tapar** (2).

**SOLAPO**, overlapped part (Ponce de León).

**SOLAYO**, Mex. cutting-in hole (Dwight), *see* **barreno** (1).

**SOLERA**, (1) stone bottom of a *trapiche* ; cast-iron bottom of a Chilean or edge-mill (*see chileno*) ; hearthstone ; well or bottom of a furnace, etc. ; (2) lower millstone, *syn.* And. Sp. *solero*, *comp.* *muela* (1) ; (3) timb. sole-piece, foot-piece, ground-sill or stretcher, *syn.* *atravesada* or *atravesado* (1), *durmiente* (5), Zac. Mex. *guardapie*, Pachuca, Hid. Mex. *macho* (5), Hualgáyoc, Peru, *plantilla* (3), Ant. Col. *quicio* (3), Tolima, Col. *tiple* (1), equiv. Fr. *semelle*, *sablière*, Ger. *Grundschwelle*, *Grundsohle*, *see cercha* (2), *plancha* (7) ; (4) Guan. Mex. timb. hitch or stemple-notch, *see huida* ; (5) *soleras*, Ant. Col. long and large horizontal poles of a roof, the smaller ones are called *encañados* ; (6) carp. floor timber, etc. ; s. *de carrera*, ground-sill (Ponce de León) ; (7) rail. sleeper, *see durmiente* (1) ; (8) rest for grate-bars (Dwight) ; (9) s. *de molinete*, mech. sole-tree, span-beam (Ponce de León) ; (10) shoe of a stamp, *see zapata* ; (11) s. *negra* or s. *pobre*, Almaden, Sp. sandstone spotted with cinnabar (Barinaga), *comp.* *metal* (4) ; the perforated arch of the *aludel* (Bustamante) furnace is covered with a layer, 2 feet thick, of this ore (Schnabel).

**SOLERO**, *see solera* (2).

**SOLETA**, Villanueva del Rio, Sevilla, Sp. clay band occurring in the coal seams, *see arcilla*, *comp.* *recincho*.

**SOLEVANTAMIENTO**, geol. uplift, *see levantamiento* (2)

**SOLICITAR**, s. *una concesión*, *see denunciar*.

**SOLICITUD**, Mex. petition or application for a mining claim, *comp.* *pedimento*.

**SOLLAMADIZO**, Huelgáyoc, Peru, rock liable to run or cave in (*der-rumblable*).

**SOLVADERA**, pump. snore-piece of a windbore, *see alcachofa*.

**SOLVER**, Ant. Col. pump. to fork, *see solvadera*.

**SOMBRA** (shade), (1) grey tinge of certain ores or matrices of ores (M. J. Gloss.) ; (2) *see u. manta* (3).

**SOMBRERETE** (dim. of *sombrero*), (1) Mex. a kind of crown on the top of a mountain (Bárcena), *syn.* *bernalejo*, *comp.* *bufa* (1) ; (2) mech. bonnet, cap, *see sombrero* (5) ; (3) spark-arrester of a locomotive, boiler, etc. ; (4) bor. disc of Kind's free-falling apparatus, *see sombrero* (1).

**SOMBRERO** (hat), (1) bor. disc of a free-falling cutter, *syn.* *sombrerete* (4) ; (2) s. *de hierro*, gossan, *see colorados* ; (3) piece of flat iron of semicircular form which sometimes covers the spindle [*cojinete* (2)] of a windlass [*torno* (2)] ; (4) Peru, timb. cap-piece, *see capa* (4) ; (5) mech. cap, cowl, bonnet, hood, dome, *see sombrerete* (2).

**SOMERO, RA**, adj. superficial (of deposits, etc.).

**SONDA**, (1) bor. boring-tool as a whole, each separate piece is called a *barra* (4) or *varilla* (5), excepting the boring-tool proper, which is called the *trépano* ; (2) s. *de cuchara*, bor. sludger, *see cuchara* (2) ; (3) act of boring ; s. *de tirante*, boring by means of rods.

**SONDAR, SONDEAR**, to bore (deep), *see abrir* (2).

**SONDEO**, (1) borehole (deep), *syn.* *agujero de s.* ; (2) boring (deep) ;



s. con el diamante, diamond-boring ; s. por la cuerda, or s. chino, boring by rope or Chinese method ; s. por la sistema canadense, American boring system ; s. por percusión, boring by percussion ; s. rígido, boring by means of a rod.

**SOPANDA**, (1) joist, cross-beam ; (2) timb. a long sollar or bunding [plataforma (1), puente (5)] which requires two struts [jabalcones (2)] to support it, *see* Fig. 70 (after Moncada).

**SOPAPO**, pump. valve or sucker, generally of leather, *see* émbolo (2), válvula.

**SOPLADERO**, vent. air-hole, *comp.* lumbrera (1).

**SOPLADO, DA**, adj. aluvión soplado, Ant. Col. alluvial deposited by a cataract or strong current of water (Uribe), *comp. u.* hervido, da.

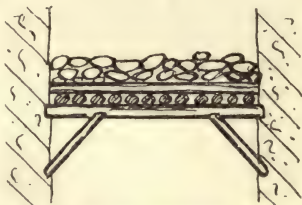


FIG. 70.—Sopanda.

**SOPLADO**, large empty space or irregular cavity in a vein, the sides of which are sometimes lined with crystals of quartz, calcite, heavy spar, carbonate of iron, etc. In the mines of Almagrera and Mazarrón, Sp. soplados or quebradas (3) give out enormous quantities of CO<sub>2</sub> (Molina), *comp.* drusa.

**SOPLADOR**, blower (of gas).

**SOPLANTE** (from soplar), aparato s. or máquina s., met. blower.

**SOPLAR**, to blow with bellows ; met. to furnish blast for a furnace.

**SOPLETE**, (1) blow-pipe ; ensayo al s., blow-pipe assay ; (2) twyer (Dwight), *see* tobera.

**SOPLIDOS**, Peru, subsidences at the surface, due to the caving-in of the bovedones (2), *see* revenimiento.

**SOPLO**, blast.

**SOPORTE** (support), (1) mech. hanger, cushion, plummer-block, *see* chumacera ; (2) bracket, *see* repisa ; (3) frame or carriage of a rock-drill, *see* bastidor (1) ; (4) column or stretcher-bar of a rock-drill ; (5) frame of a windlass, *see* caballete (8).

**SOQUETE**, Mex. (1) met. clay for stopping furnace-tap (Dwight) ; (2) clay in veins (Dwight), *see* arcilla.

**SOQUETERO**, Mex. one who wets and kneads clay to be used at the furnace (Dwight).

**SORDO, DA**, adj. silent, *see u.* cañonazo.

**SORI**, sory or sulphate of iron, *comp.* caparrosa (1).

**SOROCHE**, (1) Peru and Ecuador, disease, caused by rarefaction of the air at great altitudes, in men and beasts, mountain sickness, *syn.* veta (6), zaroche ; (2) argentiferous ore of lead, *e.g.*, s. plomoso, Zac. Mex. carbonate of lead, etc. ; s. reluciente, argentiferous galena, *syn.* metal plomoso reluciente, *see u.* liga (2) ; soroches, Sultepec, Mex. galena of coarse grain and poor in silver, used as metales de ayuda (1), *see* plomo (2).

**SOROQUE**, gangue or matrix, *see* matriz (1).

- SOSA, (1) soda-ash, *see* **barilla** ; (2) native carbonate of soda, *see* **natrón** ; (3) chem. soda or oxide of sodium.
- SOSTENIMIENTO, supporting (of mines), *see* **fortificación**.
- SÓTANO, *see* **resumidero**.
- SOTLANQUE, Guerr. Mex. copper pyrites (S. Ramirez), *see* **cobre** (2).
- SOTA ! (under, below), Rio Tinto, Sp. look out ! (call down shaft, etc.), *comp.* **abajo** !
- SOTOMINERO (under-miner), boss-miner, working under the underground captain or chief miner [**minero** (3)], *syn.* **poblador** (1), *comp.* **mandón**.
- SOYOTE, Mex. vug (Dwight), *see* **drusa**.
- STOCKVERK, stockwork, *see* **u. masa** (1).
- SUADERO, Mex. in the **patio** process, a coating of unmixed ore left on the flag-stones, showing that the operation known as **traspaleo** is incomplete ; the bottom of the **torta**, *comp.* **pelo** (5).
- SUBASTA, SUBASTACIÓN, judicial sale of goods by public auction ; pública s., public auction, *syn.* **almoneda**, **remate** (3) **público**, **vendeja**, Span. Am. **venduta**, *see* **venta**.
- SUBASTADOR, auctioneer, *syn.* **vendutero**.
- SUBASTAR, to sell by auction.
- SUBIDA, (1) ascent, *see* **u. bajada** (1) ; (2) Col. backing of a water-wheel, or the narrow inside portion of the bucket.
- SUBIDORA, *see* **u. peña** (4).
- SUBIENDO, rail. up grade (Ponce de León).
- SUBLEVACIÓN, geol. upheaval, *see* **levantamiento** (2).
- SUBSIDENCIA (from Engl.), geol. subsidence, sinking, *see* **hundimiento** (2).
- SUBTERRÁNEO, NEA, adj. for transporte subterráneo, *see* **u. transporte** ; *see* **u. excavación**.
- SUCCINO, amber, *see* **electro** (1).
- SUCCIÓN, suction, *see* **aspiración**.
- SUCOPORA, *see* **u. candeia** (2).
- SUCRE, Ecuador, a coin ; 8 sucres = \$5 gold.
- SUELDO, wages, salary, pay.
- SUELO, (1) surface of the ground, *syn.* **superficie** ; (2) floor of a gallery, *see* **piso** (4).
- SUELTO, TA, adj. loose, *see* **u. terreno** (2).
- SUELTO, loose piece of metal or mineral, shoad-stone, *see* **riego** (3), **rodado** (1).
- SUICHE (from Engl. switch), Col. railway-switch, *see* **cambio** (1) ; the **caimán-rana** is the triangle which forms part of the switch.
- SULFATO, sulphate ; Mex. in the **patio** process, sulphate of copper.
- SULFONETE, blast. slow-match, *see* **mecha** (1).
- SULFURO, sulphide ; sulfuros Mex. (1) sulphide ores ; (2) met. rich sulphides of silver from lixiviation processes (Dwight).
- SUMIDERO, drain, well, sump (Chalon), *see* **caja** (3).

**SUPERFICIE**, surface, *see* **suelo** (1).

**SUPERINTENDENTE**, (1) superintendent or manager, *syn.* **administrador** (1), **capataz** (1), **director**, **encargado**; (2) comptroller, overseer, supervisor. **NOTE**.—In Sp. = an officer of high rank, *e.g.*, **S. de la Casa de Moneda**, Warden of the Mint.

**SURTIDERO**, (1) conduit or sluice, *see* **buzón** (3), **esclusa**; (2) s. de agua, reservoir, basin, *see* **estanque** (1).

**SURTIDOR**, jet of water or gas.

**SUSPENDIDO, DA**, pp. of suspend; **bomba suspendida**, sinking-pump.

**SUTIL**, *see* **u. moler** (1).

**TABAIRES**, **pedra t.**, Cartagena, Sp. soft limestone used in masonry-work for mines, *see* **mampostería** (2).

**TABIQUE**, (1) partition-wall, *see* **pared** (1); wall separating **anchurones** (1) in **Stockwerkbau**; (2) Mex. sterile material separating bands [**cintas** (2)] of ore, *see* **caballete** (9); horse of rock in a vein, *see* **caballo** (5); (3) c.m. vent. brattice, air-brattice, partition or division in a shaft, heading, etc., *syn.* **compartimiento de aire**, **división** (2), equiv. Fr. **cloison**, Ger. **Wetterscheider**, *see* **chimenea** (4), **huaira** (1); (4) timb dividing-piece or divider of a shaft, *see* **atravesada** (2).

**TABLA**, (1) board, *syn.* **plancha** (7), equiv. Port. **taboa**; timb. lagging-board, *syn.* **t. estacada**, *see* **estaca** (6); **t. alcaceña**, board 9 feet long, 24 **dedos** (about 16½ inches) wide, 3 **dedos** (about 2 inches) thick (Acad.), *syn.* **portada**, **t. portada**; **t. de chilla**, thin board of split deal, *see* **chilla** (2); **t. de cinta** or **de medio tallado**, half-inch board; **t. de coto**, board one hand-breadth wide; **t. de gordillo**, Toledo, Sp. board 6 feet long, 6 inches wide and 1½ inches thick (Acad.); **t. de gordo**, Segovia, Sp. board 7 to 9 feet long, 10 to 16 **dedos** (7 to 11 inches) wide, 2 **dedos** (1½ inches) thick (Acad.); **t. de tallado**, inch-board; **t. portada**, *see* **t. alcaceña**; **t. portadilla**, board 9 feet long, 20 **dedos** (14 inches) wide, and 3 **dedos** (2 inches) thick (Acad.); **t. gruesa**, *see* **tablón**; *see* **tablero** (1), **tala-bordones**, **valais**, **varilla** (5); (2) side of a furnace [**horno** (2)], of a vein, of a shaft or gallery, *see* **costado**; **t. de alto**, hanging-wall side; **t. de bajo**, footwall side. **NOTE**.—The **tablas** of a shaft are the short sides or “ends,” *see* **testeros** (4). (3) The broader face of a board, beam, etc., if the widest part is against the rock = **puesto de tabla**; in Zac. Mex. practically synonymous with width, *comp.* **canto** (2); (4) flat diamond (**diamante**) of little thickness or one cut in table form.

**TABLACHO**, sluice- or flood-gate, *see* **sangradera** (1).

**TABLADILLO** (small stage), (1) platform [**plataforma** (1)] made of boards [**tablas** (1)], *see* **camada** (3), **tablero** (2); for **t. móvil**, *see* **balsa** (3), for **t. provisional**, *see* **tarango**, *u.* **tapestle** (1); (2) Cerro de Pasco, Peru, an **ingenio** (2) with the water-wheel above the grind-stones (O. F. Pfordte).

**TABLADO**, stage, flooring, *see* **tablero** (2).

**TABLAZÓN**, board-wood; lumber.



**TABLERO**, (1) board [*tabla* (1)] planed and fashioned; *tableros*, in spilling = breast-boards, *see* *escudo* (1); (2) platform [*plataforma* (1)] made of boards used in rising, *syn.* *tablados entarimados*, *see* *camada* (3); (3) *t. volante*, cradle or suspended scaffold, *see* *descanso* (4); (4) u. haul. carriage used on steeply inclined planes, *see* *plataforma* (5); (5) *t. móvil*, movable turntable (*e.g.*, Riudant's); (6) *t. móvil horizontal*, transp. the "tip" of S. Wales (Molina); (7) Mex. tally-board; (8) *t. de conmutadores*, el. switch-board, *see* *cuadro* (5); (9) Ant. Col. mech. prep. inclined table with notches in it, used below the *cernidor* (2); (10) *explotación por tableros*, working by chess-board (Lucas).

**TABLETACA**, spilling-lath (Chalon), *see* *pilote* (2).

**TABLILLA**, carp. batten, slat, lath (Ponce de León), *see* *listón*.

**TABLÓN**, plank or thick board (Port. *taboão*), *e.g.*, 11 feet long, 12 inches wide, and  $2\frac{1}{2}$  inches thick, *syn.* *durmiente* (2), *tabla* (1) *gruesa*, *see* *prensa* (1), *varilla* (5).

**TABLONCILLO**, flooring-board, *syn.* Span. Am. *florimbó*, *florimborde*.

**TABOLEIROS**, (1) Port. shallow boards; (2) Minas Geraes, Braz. lower bench-deposits or placers (*see* *placer*) older than the present river-channels, *comp.* *grupiaras*, *veias* (2).

**TABULAR**, *see u. cuarzo*.

**TACA**, each plate of the crucible (*crisol*) or hearth of a forge [*forja* (1)] (Acad.).

**TACANA**, **TACANO**, ore rich in silver, commonly black (Guim), occasionally grey or ash-coloured (Barba, 1640)—probably a var. of argentite, *see* *polvorilla* (1), *plata* (2).

**TACHIA**, Bol. llama-dung, *see* *taquia*.

**TACHOGRAFO**, an instrument for registering the movement of a cage in a shaft, *syn.* *cronotaquigrafo*, *dromografo*.

**TACHÓN**, mech. spindle, equiv. Fr. *tourillon*, *see* *eje* (2).

**TACHUELA**, tack or small nail with a large head, *syn.* *clavete*, *clavo* (1) *de chilla*, *chillón*.

**TACO**, (1) stopper or plug, *see* *tapador*; *t. de fundición*, cast-iron sleeve above the nut of the frame of a Dubois and François boring-machine (Molina), *see* *manga* (9); (2) blast. wadding; tamping, *see* *ataque* (1); (3) blast. tamping-bar or rammer, *see* *atacadera*; (4) *dar taco*, *see* *tirar* (1); (5) *tacos*, Mex. stones in the bottom of an *arrastre* (3), roughly in the form of truncated pyramids, with the larger base above; *tacos de banco* (3), *tacos* of larger section, employed when mercury alone is used for amalgamation, *see* *ripio* (3); (6) Ant. Col. timb. stemple or stull-piece, *see* *estemple*; (7) timb. leg-piece [*peón* (4)] or prop; (8) *tacos*, hoist. keps or keeps, *see* *taquetes*; (9) *t. de madera*, pump. set-off, or method of joining pump-rods to the spear-rod (Molina), *comp.* *pescante* (2); (10) S. Sp. mech.-prep. head-board of a round-buddle, etc., *see* *distribuidor*.

**TACÓMETRO**, *see* *taquimetro*.

**TAEL**, Phil. (1) ordinary weight, the sixteenth part of a *cate*, equiv. to 39·537 g. ; (2) weight for precious metals, equal to 10 *mases* or 100 *condrines* = 37·68 g. (Acad. gives 36·67 g.).

**TAHONA** (or *atahona*), Mex. spoon-arrastre or grinding-mill for the *granza* or crushed ore ; it is an ordinary arrastre moved by a water-wheel, having floats fixed in the same plane as the arrastre, but occupying double the space, *syn.* arrastre (3) *de cuchara*, *t. de cucharas* (St. Clair Duport), *see* *cruz* (1), *espeque* (1), *taza* (1).

**TAHONERO** (or *atahonero*), Mex. man in charge of the *tahona*.

**TAJADERA**, (1) Aragón, Sp. sluice-gate or flood-gate, *see* *sangradera* (1) ; (2) cold-chisel, *see* *cortafrió* ; (3) Mex. in the *patio* process, the wedge [*cuña* (1)] used for breaking up the slime, etc., deposited in the vat or *tina* (2).

**TAJADERO**, anvil of a power-hammer (Ponce de León), *see* *yunque* (1).

**TAJERÍAS**, Isl. San Fernando, Sp. large open deposits, squares of 52 m. side, in which salt water is evaporated (Molina), *see* *era*, *salero* (2).

**TAJO** (cut), (1) cut or opening in a mountain, *syn.* *corte* (2) ; (2) *t. abierto*, Mex. open-cut, *syn.* *corta* (2), Mex. *descarga* (6), equiv. Braz. *talho aberto*, *see u. cantera* (1) ; *tajos* or *tajos abiertos*, Cerro de Pasco, Peru, immense quarries or open-cuts, largely due to subsidence (*revenimiento*) ; (3) *á. t. abierto*, Mex. open-cutting, working open-cast or quarrying, *syn.* Sp. *á cielo abierto*, equiv. Fr. *travail à ciel ouvert*, *see u. cantera* (1), *patio* (3) and *sacar* (1) ; (4) working-place or cut ; any long and wide working as distinguished from a gallery or shaft (*vía de comunicación*), *syn.* *campo de labor*, *talla* (1), *comp.* *faja* (3) ; *labor en grandes tajos ascendentes* or *montantes*, longwall following the inclination of the deposit (ascending), equiv. Fr. *ouvrage par tailles ascendantes* or *montantes*, Ger. *schwebender Strebbau* ; *labor en grandes tajos oblicuos*, longwall half-topways, equiv. Fr. *ouvrage par tailles obliques* or *couchées*, Ger. *diagonaler Strebbau* ; *labor en grandes tajos rectos*, longwall following the direction of the deposit, equiv. Fr. *ouvrage par tailles droites*, Ger. *streichender Strebbau* ; *t. ascendente*, ascending cut, equiv. Fr. *taille montante*, Ger. *Steigort* ; *t. descendente*, descending cut, equiv. Fr. *taille descendante*, Ger. *Fallort* ; *t. recto*, a cut taken up the slope of a deposit, and perpendicular to the main gallery, equiv. Fr. *atelier rectiligne* (*but see above*) ; *tajos inclinados* or *rebatido*, equiv. Fr. *rabatage* ; *tajos sencillos*, equiv. Fr. *méthode des chambres mode direct et mode retrograde*, *see u. labor* (2), *macizo* (5), *u. método* ; (5) *tajos*, Ant. Col. alluv. m. cuts or slices into which a *barredura* (1) is divided, in order to work it successively (Uribe), *comp.* *cavas* ; (6) *entrar t.*, *see u. tonga* ; (7) carp. block ; *t. de yunque*, anvil-block, *see* *cepo* (5) ; (8) cutting edge, *see* *bisel* (2) ; (9) task, *see* *tarea*.

**TAJÓN**, And. Sp. a vein of earth or very white stone, of which lime is made (Acad.).

**TALA**, felling of trees, *see* *corte* (10).

**TALA**, Port. lath, *see* **lata** (2) ; **t. de junção**, fish-plate, *see u. chapa*.

**TALABORDÓN**, Ant. Col. (1) **talabordones**, boards or planks placed along the upper sides of flumes or trestle aqueducts so that they can hold more water, *see* **mampuesto** (3) ; (2) wooden breastworks [**trinchos** (1) **de madera**] placed in the side or centre of a landslide in order to sustain the water of a ditch (**acequia**), *comp.* **tapón**, **trincho** (2), **tupia** ; (3) **t. de un tambor** (4), **de una zapa** (2), etc., edge of a rise, intermediate level, etc. (used in measuring ground).

**TALACHA**, Mex. pickaxe ; mattock, *syn.* **talbacha**, *see* **zapapica**.

**TALADRA**, bor. wimple or wimble, *see u. trépano*.

**TALADRAR**, to bore or drill, *see* **barrenar**.

**TALADRO**, (1) carp. gimlet, auger, *see* **barrena** (1) ; (2) borer or drill, *see* **barreña** (2) ; **máquina de t.**, *see* **perforadora** ; **t. de punta de diamante**, diamond-drill ; **t. de sondeo**, boring-chisel or chisel ; (3) boring-bit or bit (Chalon), *see* **bisel** (2) ; (4) hole bored by (2), bore-hole, *syn.* **t. de mina**, *see* **barreno** (1) ; (5) bor. open auger, *see u. trépano*.

**TALABACHA**, *see* **talacha**.

**TALCO**, talc, *syn.* Mex. **pedra de jabón** (5), *see* **chimaltizatl**, **espejuelo** (1), *u. hoja* (3), **tosca** (7) ; for soapstone var. of talc., *see* **jabón** (1).

**TALEGA** (Port. **taleigo**), bag, sack, *syn.* Mex. **talía**, *see* **saco** (1) ; “ **angosta talega ancho costal** ” (proverb for poor people).

**TALHO ABERTO**, *see u. tajo* (2).

**TALIA**, *see* **talega**.

**TALLA**, (1) working-place or cut, equiv. Fr. **taille**, *see* **tajo** (4) ; **método de grandes tallas**, longwall method ; (2) quarr. cutting or dressing ; (3) S. Sp. ten journeys made by boys carrying mineral, *see u. tarea* (2).

**TALLADO**, cutting of gems, etc.

**TALLAR**, to cut gems, etc. ; quarr. to hew stone.

**TALLER**, (1) workshop, machine-shop, *syn.* **obrador** (2), **oficina** (1) ; **t. de ajustador**, fitting-shop ; **t. de reparaciones**, repairing-shop ; (2) laboratory, *see* **laboratorio** ; (3) mill, *see* **hacienda** (4), **molino** (1) ; **t. de monda** or **partidor**, sorting-floors ; **t. de preparación mecánica**, dressing-floors ; (4) Span. Am. timber-yard.

**TALQUE**, *see* **tasconio**.

**TALUD**, slope or declivity of a bank, of the outside of a wall, etc., talus, *see* **arrastre** (2).

**TAMAÑO**, size ; for different sizes of ore or mineral, *see* **cabezuela** (2), *u. carbón* (2), **cribado** (2), **cuesco** (2), **finos**, **gabarro**, **granado** (2) and (3), **grancilla** (coal), **granilla**, **granza** (1), **granzita**, **granzón** (1), **grueso**, **ñuzco**, **pachapampa**.

**TAMBOR**, (1) drum of a horse-whim or malacate (1), *syn.* vulg. **bombo** **jaula** (1), **linternilla** (2), *comp.* **molinete** (2) ; drum of any hoisting-engine for round rope, equiv. Fr. **tambour**, Ger. **Förderkörbe** ; **t. de arrollamiento**, winding-drum for round ropes ; **t. de fricción**, friction-drum ; **t. espiraloide**, **t. de espiral truncada** are var., *see* **cono** (3), *comp.* **bobina** ; (2) mech. prep. **trommel** ; **t. clasificador**, classifying **trommel**,



*see u. criba* (2); (3) *veta de t.*, a bunchy or beaded vein, *see u. tope* (6); (4) Col. rise put up between two levels or galleries, *see contra-cielo* (1).

**TAMBRE**, Ant. Col. dam [*presa* (1)]; sluice-dam (*azud*) for irrigating purposes, or irrigation canal (*caz*) (Uribe).

**TAMÉN, TAMENE**, Mex. Indian porter or carrier, *see cargador* (2).

**TAMIZ**, mech. prep. sieve (of a jigger, etc.), *syn. cedazo* (2); *t. de mineral*, grizzly, *see parrilla* (2); for *fondo de t.*, *see cama* (9).

**TAMIZADO**, sifting, separation by sieves.

**TAMIZADOR**, ore-sifter or screener.

**TAMIZAR**, Peru, to sift or screen, *see cribar* (1).

**TANATE**, *see tenate*.

**TANATERO**, *see tenatero*.

**TANDA**, (1) task (*tarea*) or labour set for a certain time, *e.g.*, amount of ore or waste obtained in driving or sinking in one shift; (2) Mex. number of days appointed for the Indians to work the mines (*see mita*), hence each of the periods of days in which men alternately work or rest in mines (Acad.); (3) gang, *see parada* (3).

**TANGANILLO**, small prop or stay, *see apoyo*.

**TANQUE**, Mex. (1) tank or cistern, *see estanque* (3); *t. de asiento*, settling-tank; (2) small pool or pond, *see balsa* (1); (3) vat or large trough, *comp. tina* (1).

**TAPA** (lid or cover) (1) cap or cover in machinery; cover of a steam-cylinder, etc., *comp. buzón* (1); (2) roof or hanging-wall, *see alta* (1); (3) *peña t.*, *see peña falsa*, *u. peña* (6); (4) alluv. m. sort of coffer-dam, *see tapón* (3).

**TAPABOCA**, mouth-coverer of a pneumatophore, equiv. Fr. *ferme-bouche*, *see aeroforo*.

**TAPADERA**, assay. loose lid of a crucible, etc.

**TAPADO, DA**, pp. of *tapar*, covered up or concealed (of a mine or vein).

**TAPADOR**, plug, stopper, *see taco* (1), *tapón* (1), *tarugo*.

**TAPAJUNTA**, in wooden tubbing, a covering-joint of india-rubber, wood or other material for the horizontal joints of each section of the curb, equiv. Fr. *couvre-joint*; in pumping, method of joining main rods, *comp. pescante* (2).

**TAPANHOACANGA**, Braz. a gold-bearing gravel composed of the disintegrated and weathered remains of specular iron ore. The latter sometimes occurs as an overflow, and this weakens and breaks up into blocks; "an auriferous superficial deposit of broken fragments of ferruginous rocks" (Von Eschwege); "a breccia chiefly of massive brown iron ore, irregularly mixed with quartzose iron, mica-slate, clay-slate and quartz" (Saint-Hilaire), *syn. canga* (*q.v.*), *see brecha* (2).  
NOTE.—Compounded of *congo* and *tapi*, Indian words meaning "nigger head" (A. M. Gibson).

**TAPAOJOS**, in the *patio* process, the bandage used to cover the eyes of the mules when treading, or when being loaded or unloaded.

**TAPAR**, (1) to stop (leaks, etc.) ; Mex. to stop a furnace-tap with clay (Dwight) ; (2) mech. to overlap (Ponce de León), *see solapar* (2) ; *see tapado*, *da*.

**TAPATINGA**, Braz. parti-coloured clay, in places stratified alternately pink and yellow, the pink beds being thickest and of much harder texture than the others ; on the top lies a bed of sand, in some places several feet thick, the whole rests on a stratum of sandstone. It sometimes has calcareous layers thickly studded with marine shells interstratified with the clay. Tapatinga clay sometimes forms coarse iron cementing conglomerate, and has a compact stony texture, while elsewhere it is intermingled with scoria-looking conglomerate ; it occurs at intervals over the whole valley of the Amazons. At St. Paulo it is 100 feet above the main level of the river (A. Wallace).

**TAPESTLE**, (1) Mex. a wooden platform [*plataforma* (1), *tabladillo* (1)], *sollar*, bunding or stage. The platform itself may be formed of boards [*tablas* (1)], planks [*planchas* (7)], round timbers (*rollizos*), large branches of oak [*latones* (2)], large split pieces (*rachas*), or small branches [*ramas* (1)], in which case the *sollar* [*encamación* (2)] is called *entablado*, *enplanchado*, *enrollizado*, *enlatonado*, *enrachado*, *enramado*, respectively (Gillman and Molina), *see camada* (3) ; for *tapestle* made of frames and spilling-laths near a shaft, *see* Fig. 71 ; (2) Mex. timbers for supporting roofs of workings ; (3) Mex. resting-place or *sollar* of a ladder-way, formed of *vigas* and *cuartones* (1), *see descanso* (1) ; (4) *tapestles*, Ant. Col. pillars of ore left as supports, *see u. pilar* (3).

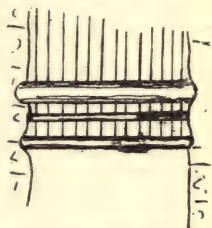


FIG. 71.—Tapestle (1)  
(after Luis Carrión).

**TAPIA**, (1) mud-wall (Port. *pared de taipa*), in Col. compressed earth used in making houses. NOTE.—In Morocco, houses are made of *tabia*, or compressed gravel. *See encajonado*, *pece*, *tapial* ; *t. acerada*, *tapia*, coated with a mixture of lime and sand ; *t. real*, wall made of earth mixed with some lime ; (2) superficial measure of 50 square feet ; in Col. 1 *tapia* is 6 feet long, 3 feet high, and  $1\frac{1}{2}$  feet thick = 27 cubic feet ; (3) section of mud-wall made at one time ; (4) moulded and compressed earth for making (1) or (3).

**TAPIADOR**, builder of mud-walls, etc.

**TAPIAL**, mould for making mud-walls [*tapias* (1)], *see encajonado*.

**TAPIAR**, (Port. *taipar*), to stop up with a mud-wall ; to make mud-walls.

**TAPÓN**, (1) plug, stopper, *see tapador* ; plug for closing manhole of a mine-dam, etc. ; (2) Mex. timb. pent-house, *see resguardo* ; (3) Ant. Col. alluv. m. a dike of timber and branches constructed across a river or ground-sluice [*canalón* (2)] in order to hold the black sand [*jagua* (2)], gold and gravel (Uribe) ; a sort of coffer-dam [*see u. represa* (1)]

constructed in rivers in the dry season (*verano*), *syn.* *tapa* (5), *comp.* *cerco* (5), *trincho* (2). A *tapa* or *tapón* is square or rectangular in shape, and constructed of a double row of large stakes (*estacones*), arranged crosswise [*caballos* (9)], and driven in by a heavy mallet; a beam rests in the forks above, and below a number of battens [*latas* (2)] are tied with *bejucas*. The space between the double row of stakes, etc., is filled with earth, branches, etc. The water inside the coffer-dam is then pumped dry, *see* Fig. 72 (after Muñoz); (4) mine-dam, *see* *cerramiento*.

**TAPONEAR**, Ant. Col.

alluv. m. to construct a dike or *tapón* (3).

**TAPONERA**, Mex. dolly-bar (Dwight).

**TAQUÁRA**, Braz. laths of bamboo, used in building cottages (Henwood).

**TAQUEADOR**, Ant. Col. (1) *peon* who fires the blast, blaster; (2) blast-tamping-bar, *see* *atacadera*.

**TAQUETES** (from Fr.), keps or -keeps, (U.S.A.) landing-dogs, *syn.* *morillo* (4) *de descanse*, *tacos* (8), equiv. Fr. *taquets*, Ger. *Aufsatzstützen*, *Aufsatzvorrichtung*, var. are *t. de cerrojo*, *t. giratorios*, *t. que se ocultan por resbalamiento*, *por rotación y por retroceso* (consult Molina).

**TAQUIA**, Peru, llama dung (or sometimes dry sheep's dung) used as fuel in the upper regions. The calorific power of *taquia* surpasses that of coal; both *yareta* and *taquia* afford a long flame and do not clinker . . . but the heat generated by the *yareta* is not so powerful as that from the *taquia* (A. L. Pearse), *syn.* Bol. *tachia*, *ucha*, *see* *carrana*.

**TAQUÍMETRO**, surv. tacheometer (sometimes spelt *tacometro*).

**TARA**, (1) tare; (2) tally.

**TARABITA**, Span. Am. rope used for hauling the *oroya* over rope bridges, *see u.* *punte* (1).

**TARAJA**, *see* *terraja*.

**TARANGO**, Zac. Mex. a platform [*plataforma* (1)], stull or bunding on which *barreteros* work in overhand stoping, made of *llaves de viga*,

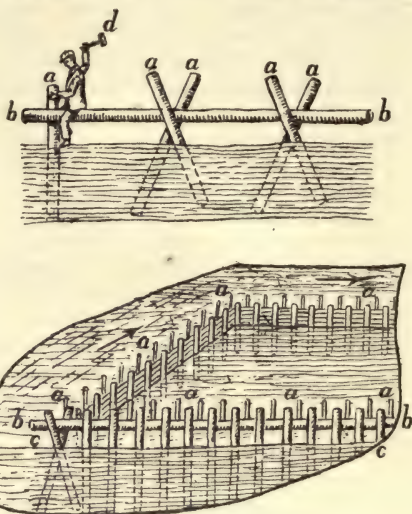


FIG. 72.—*Tapón* (3) (after Muñoz).

*a*, *estacones* forming *caballos* (9); *b*, *viga* or beam;  
*c*, *latas* or battens; *d*, *mazo* or mallet.



to which cross-pieces [*travesaños* (1)] are tied with *lazos* and ropes, the latter receive the *tabladillo* (1), or platform of boards (Luis Carrión), *syn.* *tabladilla* (1) provisional, Pach. *taranguela* (2), *see* *camada* (3).

**TARANGUELA**, (1) *see* *balsa* (3); (2) *see* *tarango*.

**TAREA**, (1) task, *syn.* *tajo* (9); shift; day-work, *see* *jornal* (1), *tanda* (1), *tequio* (5); (2) a certain quantity of wood for fuel, *e.g.*, in Venez. 1 *tarea* or cord is  $5\frac{1}{2}$  feet long by  $5\frac{1}{2}$  feet high by 33 inches wide (G. P. Ashmore and C. Seale); a certain quantity of ore set as a task, *e.g.*, in Tasco, Mex. = 4 *montones* of 100 *quintales* (Humboldt), at Guadalcázar = 4 sacks, *see* *tequio* (3); a certain number of journeys made in carrying ore, etc., *see* *talla* (3); (3) Ant. Col. in the Remedios and other districts, all hands were formerly fed by the companies; on Sundays and feast days those who wished to earn rations (*raciones*) for the day had to work up to 10 A.M. ("tarea"), otherwise they forfeited them. This custom still exists in some mines.

**TARUGO**, wooden peg or plug, stopper, *see* *tapador*.

**TAS**, *see* *tases*.

**TASA, TASACIÓN**, valuation, appraisalment; assessment.

**TASADOR**, valuer.

**TASCINA**, selenide of silver or naumannite [ $\text{Ag}_2\text{Se}$ ], *see* *plata* (2).

**TASCO**, (1) "hards" or refuse of flax, wool or hemp (*agramiza*), used for packing; (2) cupel or crucible, *see* *crisol* (1), *copela* (1), *tasconio*.

**TASCONIO**, a kind of argillaceous earth of which crucibles [*crisoles* (1)] are made, *syn.* *talque*. "The crucibles used for this purpose are made of 'tasconium,' a white earth similar to potter's clay in appearance," (Pliny, Hist. Nat. l. 33, c. 21).

**TASES**, Mex. masses of ore which have been calcined in the open air or in heaps, *syn.* *caleras* (4), *comp.* *montón* (1).

**TAZA** (cup or wooden bowl), Mex. (1) central cup or bowl of the *tahona* or *arrastre* (3), 9 feet in diameter by 1 foot deep, paved with unhewn slabs of porphyry (G. F. Lyon); (2) crucible of blast-furnace (Dwight), *see* *crisol* (2).

**TECACOLOTE**, Guerr. Mex. aluminous slate (*pizarra alumbrosa*)—from Aztec word meaning crow-stone (S. Ramirez).

**TECALÉ, TECALÍ**, Mexican marble or Mexican onyx found in the district of Tecalí, Pueblo; it is a var. of lime alabaster—from Aztec *teocah* (Lord's mansion), a name given by the Indians to their temple, *syn.* *mármol mexicano*, *ónix mexicano*.

**TECHAR**, to roof, to cover with a roof (*techo*).

**TECHEO**, *see u.* *testera* (3).

**TECHICHIL**, Guerr. Mex. a ferruginous compound noxious in the *patio* process; *esmeril* (2) is another bad ferruginous compound, *also* *lechecilla*, which is calcareous (S. Ramirez).

**TECHO** (roof), (1) hanging-wall or roof of a deposit, *see* *alta* (1); (2) roof of a level or gallery, *syn.* Peru, *alza* (2), *cielo* (1), *comp.* *costado*, *piso* (4); (4) back of a stope, *see* *techumbre*, *u.* *testero* (3).

- TECHUMBRE**, roof (*techo*), generally lofty, *see* **tendido** (1); min. back (Ponce de León), *see* **techo** (3).
- TECOMATE**, Mex. (1) a cup (*taza*) made of the gourd; (2) a word of contempt given by European Spaniards to the white natives of Mexico (Velázquez).
- TECORAL**, Huitzucó, Guerr. Mex. deads or attle, *see* **desecho** (3).
- TECOZAHUITL**, Mex. Aztec name for yellow ochre. "El ocre amarillo, llamado *tecozahuitl* servia, como el cinábrio, ó vermellón, para la pintura. El ocre formaba parte de los objetos que componian la lista de los tributos de Malinaltepec" (Humboldt). *See u. ocre*.
- TECPATL**, Mex. Aztec name for flint [*pedernal* (1)], hornstone [*cornea* (1)], or green jade (*jade*).
- TEGUILOTE, TEHUILOTE**, (1) Guerr. Mex. crystallised quartz (*cuarzo*), *comp. u. guija* (2). NOTE.—From Aztec word meaning crystal-stone (S. Ramirez); (2) Mex. country, *see* **roca** (4).
- TEJA**, (1) roof-tile; **t. cóncava**, gutter or pantile, *see* **tejoleta**; (2) Mex. hind bow of a saddle; fore bow = **cabeza de la silla** (Velázquez); (3) prov. one-fourth or one-twentieth part of a **fila** (2) **de agua** (Acad.).
- TEJADO**, roof covered with tiles; **t. de tejamaníl**, shingle-roof; shed.
- TEJAMANÍL**, Mex. shingles (*ripias*); spelt also **tejamaní**, **tejemaníl**.
- TEJAR**, to cover with tiles; **pizarras de t.**, roofing-slates.
- TEJEAR**, *see* **texear**.
- TEJIDO** (texture), **t. de alambre**, wire-cloth, *see* **tela**.
- TEJO**, (1) yew-tree; (2) round metal plate; Mex. cake of silver; cake of metal; **t. de oro**, gold in the form of bullion, ingot of gold, *see* **plancha** (1); (3) *see* **tejuelo** (1).
- TEJOLETA**, piece of burnt clay; tile, *see* **teja** (1).
- TEJOLOTE**, Mex. stone pestle, *see* **maja**.
- TEJÓN**, wedge or plate of gold, *see* **plancha** (1).
- TEJUELA**, *see* **tejuelo** (1).
- TEJUELO**, (1) bearing of a vertical spindle, *syn.* **tejo** (3), *see* **quicio** (4) Mex. (*tejuela*) a die or square piece of steel, conical in the centre, which is fixed in the head of the **cepo** (1) of the **arrastre** (3), and into which the **guijo** (2) at the base of the **peón** (3) fits (S. Ramirez); mech. pillow-block, or iron cradle or bearing to hold the boxes or brasses which form a journal-bearing, *see* **chumacera**; (2) the soft metal lining of a pillow-block, generally of bronze ("brass") or Babbitt metal; the hard metal casing, generally steel, enclosing these, being known as **muñón** (3).
- TELA**, (1) **t. de alambre**, **t. metálica**, wire-cloth, *syn.* **tejido de alambre**; (2) screen, *see* **criba** (2); (3) **t. de bayeta**, baize or "blanket"; (4) **t. sin fin**, mech. prep. endless band.
- TELERA**, Huelva, Sp. heap of copper pyrites of a pyramidal shape for calcination (Acad.); **teleras** (*tileras*) Rio. Tinto, met. open piles [*montones* (1)] for the lower grade copper ores; these are roasted with 2 per cent. of salt, *comp.* **torreras**, *see* **tostación**.

**TELURIO**, (1) tellurium ; (2) tellurium ore, *see* **eslamosa**.

**TEMBLADEROS**, Mex. (1) near Macuspana, Tabasco, there is a place of this name, so called because the ground is elastic, and easily yields to the pressure of the foot—the formation is asphaltic (**Sarlat**), *see* **betún** ; (2) enormous swamps [**pantanos** (1)] in the plains of Chiapas and Tabasco ; in the wet season they form shallow lakes (**lagunas**) of great extension (Dr. E. Böse), *see* **tremedal**.

**TEMBLOR DE TIERRA**, earthquake, *see* **terremoto**.

**TEMESCUITATE**, **TEMESQUITATE**, **TEMEZCUITATE**, Mex. (1) the earthy part of ground-up ores (**Gamboa**) ; (2) met. lead scoria or litharge (**litargirio**), rich in silver.

**TEMPERAMENTO**, vent. Fr. **tempérament** of Guibal ; “el temperamento de ventilación de una mina es lo relación que hay entre el volumen de aire que pasaria por la mina, á la presión de un milímetro, y el de un metro cúbico de aire puro á la misma presión de un milímetro” (Molina).

**TEMPLADERA**, prov. sluice-gate, *see* **sangradera** (1).

**TEMPLADO COMO CUERDA DE VIOLÍN**, Almaden, Sp. said by miners of a stull-piece (**estemple**) which has been properly fixed in position, and which gives the right sound when struck with a hammer.

**TEMPLADOR**, Peru, raised central portion of a **cerco** (4) for the man who directs the horses in the **repaso**, *syn.* **mogote central**.

**TEMPLAR**, to temper steel, etc.

**TEMPLE**, tempering, hardening.

**TEMPORERO**, **TEMPORIL**, temporary labourer.

**TENACILLAS**, *see* **tenazas** (2).

**TENATE** (**tanate**), Mex. and Hond. large bag made of **pita** or **mecate**, hide or even linen, or of basket form, usually slung on the shoulders for carrying ore, rubbish, etc., or may be drawn up the shaft by ropes ; a **tenate** made of half an ox-hide will hold 9 **arrobas** of heavy ore *see* **saco** (1), *comp.* **manta** (1), **zurrón**.

**TENATERO** (**tanatero**), Mex. man or lad who carries the ore in a **tenate** to the plat [**despacho** (3)] or to the surface—a **tenatero** will usually carry from four to six **arrobas**. According to Humboldt, he will climb, without fatigue, ladders of 1800 steps, eight to ten times consecutively, with weights varying from 225 to 350 lb., *see* **despachadores** (2), **frisada**, **mecapal** (1), *u.* **zurrón**, *comp.* **acarreador**, **carretero** (1), **hapire** (2).

**TENAZAS**, (1) tongs ; (2) pincers (**tenacillas**), *syn.* **pinzas** (2), *see* **alicates**, **mordaza** (1) ; (3) bor. large nippers used for extracting broken pieces of tools, etc., *see* **pinzas** (1) ; (4) clutch or clip for attaching wagons to rope, in endless-rope system of haulage.

**TENDEL**, mas. line stretched horizontally for walling.

**TENDIDO**, **DA**, pp. of **tender** ; for **barrenos tendidos**, *see* *u.* **barreno** (1).

**TENDIDO**, (1) roof of a house from the ridge [**caballete** (2)] to the eaves (**alero**), *see* **techumbre** ; (2) dip, *see* **echado** ; (3) line of dip



(4) **tendidos**, Mex. various lots of ore spread out for sale, *see u. rescate* (2); (5) **tendidos**, Span. Am. riffles, *syn. piletas* (4), *rejillas* (2), *represas* (2), *resaltos*, rifles, *see adoquín* (2); (6) **t. de sogas**, Span. Am. coil of rope, 25 varas long (Ponce de León); (7) **mas.** thin layer of lime, gypsum or mortar.

**TENEDOR**, (1) guardian or trustee, *syn. administrador* (2), *consignatorio* (1), *curador* (2); (2) **t. de libros**, book-keeper or accountant, *comp. contabilista, contador*.

**TENEDURÍA DE LIBROS**, book-keeping.

**TENENCIA**, leg. (1) possession, holding; (2) tenancy, tenement, tenure; **mera t. de una mina**, Col. mere tenancy exercised in the name and place of the owner.

**TENESTEL**, Tasco, Guerr. calcareous stone (MS. 1793) (? bedded limestone), *see caliza, comp. lechecilla*.

**TENOR**, **t. fino**, fineness of gold or standard, *see ley* (3).

**TENSOR** (from Fr. *tenseur*), in endless-rope haulage, the apparatus for keeping the wire-rope stretched, *see atesador, u. polea* (2).

**TENTADURA**, (1) Mex. in the **patio** process, proof made in a bowl [*jícara* (2)] of the ore incorporated with mercury, in order to discover what the **montón** (1) needs to be exactly right (**para estar de punto**); the test is made by washing a little of the ore, and getting rid of the earth, in order to find out the condition in which the silver and mercury are (Gamboa). By means of a special washing (**descargar la t.**), the following are collected in the order of their specific gravity: (a) altered and finely divided mercury = **desecho** (1), (b) amalgam which begins to be formed, and which appears to be made up of very fine particles = **limadura** (4), (c) metalliferous schlich or unaltered ore = **asiento** (3), (d) liquid mercury or solidified amalgam (S. Ramirez), *see achúa, hijuela* (2); (2) any test made by washing or panning, *see ensaye* (2), *toque* (2).

**TENTADURERO**, Mex. the trier, or the man who makes the **tentadura** (1) in the **patio** process, *comp. ensayador* (2).

**TENEMOZO**, (1) prop to support a wall, etc., *see puntal* (1); (2) *u. haul. backstay, see paradera* (2).

**TEODOLITO**, theodolite; a surveying transit.

**TEOTINES**, Valley of Mex. curious rocks, near the town of Santa Cruz, surrounded by volcanic sand (Bol. del I. G. de M.), *see peñasco*.

**TEPEGUAJE**, Mex. a very hard and compact wood (Velázquez).

**TEPESTATE**, Mex. large **batea**, used for carrying the **lama** (2), *syn. batea larga*.

**TEPETATE**, Mex. (1) waste rock, rubbish, attle or deads, *see desecho* (3); (2) hard compressed clayey sand, almost sandstone (**arenisca**), which disintegrates on exposure; (3) volcanic tuff, *e.g.*, in the Valley of Mexico, a sedimentary rock formed of grains of coarse pumice-stone (**toba pomosa gruesa**—Bárcena); at Pachuca, a volcanic tuff (**toba**) found below the soil and above the alluvium; (4) gangue or

matrix, or any part of the filling, whether mineral or "country," which contains no ore, *see* **matriz** (1); (5) country-rock or country, *see* **roca** (4); (6) snow-white carbonate of lime covering basin-deserts, *syn.* **caliche** (4), **tierra blanca**.

**TEPOSTEL** (**tepoztel**), (1) Mex. oxides of iron and other minerals, generally silver-bearing, *e.g.*, in Tehuilotepic, Guerr., brown, red and yellow oxide, in which impalpable particles of native silver and argentite are disseminated, cellular brown iron ore, specular iron, a little galena, magnetite and azurite; in Tasco, Guerr. besides the above, iron pyrites and antimonial grey copper are present (Humboldt and Dahlgren), *see* **colorados** (1), **plata** (2), *comp.* **hierroso**, **ixtajales**, **pacos** (1), **tepostete**, **tepushete**; (2) Peras, Oaxaca, Mex. masses in which more or less wide zones of oxide of iron alternate with massive iron pyrites [**acerado** (1)], and which are gold-bearing—ore having this character is called **atepoztelado** (S. Ramirez), *see* **oro**.

**TEPOSTETE**, Sonoro, Mex. boulders of specular iron ore found in gold-placers (Dwight), *comp.* **tepostel** (1), **tepushete**, *see* **placer**.

**TEPUQUEROS**, *see* **raspadores**.

**TEPUSTETE**, Calamahí, L. Cal. Mex. ferruginous ore—a variation of **tepostel** (1).

**TEQUEZQUITE**, Mex. a mixture in variable proportions, of sesquicarbonate, chloride and sulphate of soda, and various earthy and organic impurities. In Mexico City the following commercial varieties are known: rotten (**espumilla**), granular (**confitillo**), leafy (**cascarilla**), and pulverulent (**polvillo**) (M. Bárcena). NOTE.—It is sometimes spelt **terquesite**. *See* **natrón**.

**TEQUIO**, Mex. (1) charges, tax or duty, *see* **derecho** (2); (2) the portion of ore which, according to its hardness or softness in the mine, the **barretero** yields to the owner in the actual working hours (**horas de pueble**). The whole ore raised is divided between the **barretero** and the owner (**amo**), and is called **partido** (2); the portion of ore which comes from a certain part of a mine, or the quantity taken out by a **pare** (L. Carrión); *syn.* **Pachuca**, Hid. **cuenta** (2), *see* **u. tarea** (2); (3) in some places, ore not rich enough to sack underground (Dwight); (4) **tequios**, bin-heaps, *syn.* **montón de metal**; (5) a task set as one day's work (Dwight), *see* **tarea** (1).

**TERCERÍA**, (1) arbitration; (2) arbitration dues.

**TERCERO**, arbitrator, *see* **arbitrador**; **t. en discordia**, umpire between two disputants.

**TERCIAR**, to arbitrate, *see* **arbitrar**.

**TERCIO**, half a mule-load [**carga** (2)]; in Catorce, Mex. = 6 **arrobas**, elsewhere a load for a **tenatero**; in Col. (where a **carga** = 200 lb. usually) = 4 **arrobas**—the grade [**ley** (2)] of ores is sometimes calculated on this system.

**TÉRMINO**, (1) landmark, *see* **mojón** (1); (2) boundary, *see* **lindero**; (3) **t. medio**, average, *see* **promedio**.

- TERRAJA**, screw-plate, screw-stock, or die-stock, *syn.* S. Am. *taraja* ; t. con dados or cojinetes (4) y machos, stock with dies and tap (Ponce de León) ; machuelos de t., screw-taps.
- TERRAPLÉN, TERRAPLENO**, (1) platform of earth, embankment ; rail. graded road-bed ; horizontal surface of a dump, etc., *syn.* *gradería*, *see* *malecón* (4) ; (2) geol. terrace, *see* *terraza*.
- TERRAPLENAR**, to embark, fill.
- TERRAZA**, geol. terrace, *syn.* *terraplén* (2).
- TERREMOTO**, earthquake, *syn.* *temblor de tierra*.
- TERRENO**, (1) land ; t. franco, land which can be freely conceded by the State for the mining industry (Acad.) ; terrenos baldíos, terrenos nacionales, Government lands (unappropriated) ; (2) geol. formation or group of formations, e.g., t. acuífero, quicksand, t. carbonífero, carboniferous formation, t. movedizo or suelto, very soft or loose formation or rock ; (3) "country," *syn.* *roca* (4) del terreno.
- TERRERA**, waste-dump, *see* *vacadero*.
- TERRERO**, (1) heap of earth, *see* *montón* (1) ; (2) terreros, waste rock or attle, *see* *desecho* (3) ; (3) terreros, heap or dump of attle, *see* *vacadero* ; (4) deposit of earth accumulated by the action of water (Acad.).
- TERROJO**, red earth.
- TERROMONTERO**, hill [cerro (1)], hillock (colina) ; t. de aluvión, alluvium deposit or wash (Ponce de León), *see* *aluvión*.
- TERRONTERA**, break in a mountain, *comp.* *quiebra* (3).
- TERROSAS**, Mex. veins of clay resulting from the alteration of the "country" ; when rich in ore, they are known as *jaboncillo* (3), *syn.* *podridas*.
- TERROSO, SA**, adj. earthy.
- TESCATETE**, *see* *u. liga* (2) and *soroche* (2).
- TESORERÍA**, treasury, treasurer's office, exchequer ; treasurership.
- TESTERA, TESTERO**, (1) a dike breaking the course of a lode (A. Elwes), *see* *dique* (5) ; (2) end or forebreast, *see* *frontón* (1) ; (3) solid bed of mineral having two faces exposed, one (the lower) horizontal, the other vertical, overhand stope, *syn.* *banco* (2) *invertido*, *escalón* (2) de cielo, de testero or inverso, grada (2) al revés (Fr. *gradin renversée*) or *invertido*, *comp.* *banco* (2) ; *techo* (3) del t., roof or back of a stope ; labor de testers or trabajo por testers, overhand stoping, *syn.* *explotación por gradas* (2) al revés, S. Sp. and Mex. labor de realce (2), Mazarrón, Sp. labor de techeo, rebaje (1) del cielo, trabajo de cabeza (6) or de cielo (4), *see* *u. levante*, *comp.* *rebajo* (2) ; testers adosados, or método inclinado, equiv. Fr. *méthode inclinée*—tranches ; testers recostados, equiv. Fr. *maintenages* (when the escombros is in the form of steps = *maintenages avec gradins*, when it has a uniform slope = *maintenages avec talud*) ; *see* *u. realce* (2) ; (4) testers, the ends or short sides of a shaft, *syn.* *tablas* (2), *comp.* *costados* ; (5) testera de guía, Linares and La Carolina, Sp. gallery driven along



a deposit, main gallery, *see* *galería* (1); (6) *testeras*, Mex. uprights in a mine, whether pillars [*pilares* (2)], arches [*llaves* (10)] or posts [*mono* (2)] (Dwight); (7) met. side of a smelting furnace (Acad.); front of a blast-furnace, *see* *delantera*.

**TESTIGO** (witness), bor. core, *see* *nucleo* (2).

**TETILLA**, *see u. peñasco*.

**TETZONTLE, TEZONTLE**, Mex. scoriaceous and very porous varieties of basaltic and andesitic lavas, used for building purposes; "la verdadera lava ó tezontle, que es una capa de escorias rojas perduscas, de mas de un metro de espesor, con grano de olivino, agujita, hierro magnético y cuarzo, siendo su peso específico de 3.536" (A. del M. de F.).

**TEXEAR** (? *tejear*), *t. bien el horno*, Mex. to throw out litharge or slag (of a furnace) (Gamboa).

**TEZONTLE**, *see* *tetzontle*.

**TIALES**, Guerr. Mex. in the grotto (*gruta*) of Cacahuamilpa, near Tasco, a kind of natural vases, which get filled with water in the rainy season (A. del M. de F.), *comp. cueva* (1).

**TIATALES**, Tasco, Guerr. Mex. hard limestone (MS. 1793), *see* *caliza*.

**TIBE**, Ant. Col. (1) corundum (*corindón*), known to the ancient Indians and used by them to polish their tools (Uribe); (2) *tibes*, alluv. m. hard, smooth, flat, elliptical and spherical stones, which are regarded as a favourable indication by the miners (Uribe).

**TIBIR**, name of gold-dust on the African coast (Velázquez), *see* *oro*.

**TIENDA**, shop; *t. de raya*, Mex. shop at which miners obtain weekly credit (M. J. Gloss.).

**TIENTAAGUJA**, an auger for testing the ground on which it is proposed to build (Velázquez), *comp. barrena* (3).

**TIERRA** (Port. *terra*), (1) earth, land, soil, ground; *t. arcillosa*, clay-ground; *t. franca*, earth more or less loose or free; for *t. muerta* and *t. virgen*, *see u. muerto*, *ta*; (2) region of the earth; *t. adentro*, interior of a country, Mex. central portion of Mexico; (3) any rock or mineral (generally non-metallic); *t. blanca*, (a) micaceous clay; (b) Mex. calcareous tufa, *see u. caliche* (4); *t. de batán*, de batanero or de machas, fuller's-earth, *see* *greda* (1); *t. de flor*, El Caratal, Venez. bed of reddish clayey earth, 0.40 to 1.0 m. below the surface, containing blocks of auriferous quartz, grains of brown pisolitic hematite, and an agglomeration of grains called *moco* (2) de hierro. When washed furnishes, besides decomposed crystals of pyrite, non-magnetic sand, and *pepitas* of gold (Fuchs and De Launay); according to Dr. Foster it is a superficial gold-bearing rain-wash, *see* Fig. 21 c. *T. de porcelana*, china-clay (*caolín*); *t. de tinta* or de caparrosa, *see u. caparrosa* (1); *t. grasa*, pipe-clay; *t. gredosa*, clay-marl, *see* *marga* (1); *t. pesada*, heavy spar, *syn. espato pesado*; *tierras de asentar y de afinar*, Tamaulipas, Mex. decomposed reddish and yellowish white marls, *see* *marga* (1); *tierras pardas*, Dur. Mex. alluvial formation in

which hydrated peroxide of iron abounds ; **tierras rojas**, Guadalcázar, S. L. Pot. Mex. ferruginous clay covering and staining the limestone (A. del M. de F.) ; (4) ore, generally in a fine state of division, whether found in that condition, or produced so by mechanical preparation ; **tierras**, San Dimas, Dur. Mex. fines, smalls or fourth-class ore [for first, second and third class, *see u. metal* (3) and **granza** (2)] ; fine dirt impregnated with quicksilver ore, and which must be made into **adobes** (2) before roasting (Raymond) ; Huitzucó, Guerr. Mex. smalls containing  $\frac{1}{2}$  per cent. of quicksilver ; San Alto, Zac. Mex. fine cassiterite ; Almaden, Sp. fine quicksilver ores less than 1·2 inch cube, *comp. granzita* ; **tierras apolvillados**, ores a degree inferior to **azogues apolvillados** (M. J. Gloss.) ; **tierras comunes**, common earthy ores ; **tierras de asiento**, *see asiento* (7) ; **tierras de labor**, (a) smalls from ore-sorting or cobbing, *syn. arenilla* (5), **granza** (3), **metal de yunque** (2), **tierras de yunque** (2), (b) smalls from the workings ; **tierras de molero**, poor stamped ores ; **tierras ordinarias**, *see u. granza* (1) ; (5) **tierras**, deads or attle, *see desecho* (3) ; (6) gangue or matrix, *see matriz* ; (7) **tierras quemadas**, *met. see u. bola* (3) ; (8) **hacer tierras**, *see u. hacer*.

**TIJERA, TIJERAS**, (1) scissors ; (2) carpenter's horse, *comp. burro* (2) ; any timber support, constructed like the letter **X**, *see u. alfarda*, and **tapón** (3) ; (3) small channel or drain, *see desaguadero* ; (4) **tijeras**, framework of beams, crossing one another obliquely, placed across a river to stop floating timber—a boom.

**TILERA**, *see telera*.

**TILLADO**, wooden floor, *see entablado*.

**TILLAR**, to floor with boards, *syn. entarimar*.

**TIMBA**, (1) Span. Am. logs for roofs of mines (Ponce de León), *see revestimiento* (1) ; (2) Phil. bucket for water, *see cubo* (1).

**TIMBRE**, (1) bell (*campana*) provided with a spring ; (2) Mex. stamp-tax.

**TIMBRERO**, Mex. bell-man (Dwight).

**TIMÓN** (naut. rudder), hook for guiding a sledge (Molina), equiv. Fr. *gouvernail*, *see gancho* (1).

**TIMPA**, *met. tym*-stone, in front of the hearth of a blast-furnace (*horno alto*).

**TINA**, (1) Mex. in the **patio** process, the round dolly-tub, kieve or vat used for washing or settling the **lama** (2), but sometimes replaced by the box-settler or **lavadero** (3), *syn. Peru, boliche* (3), *cuba* (1), *cubeta* (1), **t.** or **tonel de trepidación**, *see batidor* (2), *u. planilla* (1) ; any circular tank or vat ; **t. cargadera**, tank into which the slimes are first discharged, a leaching-vat (**t. de lejivación**), *see tinaco*, **tonel** (3) ; (2) a pan ; **t. de amalgamación**, amalgamating pan, *syn. paila* (1), **pan**, *see remolador*, *comp. chuza* ; (3) **beneficio de t.**, **tina** system of silver amalgamation (Ger. *Sezwasche*), for which consult Domeyko, Percy, Egleston, etc. ; (4) bucket or kibble, *see tonel* (2).

**TINACO**, wooden trough, tub or vat ; wooden vat used in leaching, *see u. tina* (1).

**TINADA**, pile of wood or timber, *see* **montón** (1).

**TINAJA**, (1) large earthen jar ; (2) Mex. basin of water in rock (Dwight), (3) *tinajas*, Guadalcázar, S. L. Pot. Mex. small bunches of cinnabar formed by the meeting of two or more small veins, from half a **vara** to three or four **varas** in diameter, and which separate to north and south. They are so called from the spherical figures formed by the **respaldos** (Zárate and Flores), *see* **mercurio** (2).

**TINANCO**, Cartagena, Sp. mech. prep. hutch of a hand-jig (Ibran), *see* **riquitrúm**.

**TINCA**, (1) timb. cap-piece, *see* **capa** (4) ; (2) Peru, timb. stull, *syn.* **coche** (5), *see* **estemple**, **tinquería**.

**TINQUERÍA**, Hualgáyoc, Peru, timb. a stull [**tinca** (2)], from 3 m. long by 0·2 m. in diameter, supported by an inclined strut [*see* **jabalcón** (2)], on the former are placed polings (**caillapos**) for supporting the waste (Santolalla), forming a sort of **sollar**, *see* **camada** (3) ; sometimes used for shaft-frames.

**TINTERO** (ink-well), Peru, sump of shaft (Dwight), *see* **caja** (3).

**TINTÍN** (clink), in the **tintín** process, a hard stone has a circular mortar-like cavity, about 9 inches wide and 9 inches deep. The ore is triturated in this by an iron pestle with mercury under water ; a small stream of water is kept constantly flowing into the cavity at one side at the top, and out of the opposite side ; the amalgam is extracted from time to time, and the muddy water goes to tanks, the deposit therefrom being, if necessary, treated by the **patio** process—described by Barba (1640).

**TIPLE**, (1) Tolima, Col. timb. sole-piece, *see* **solera** (3) ; (2) timb. small prop, strut or stay placed below the cap-piece or **capa** (4).

**TIRABUZÓN** (corkscrew), (1) bor. wad-hook or spiral worm, equiv. Fr. *tire-bourre*, Ger. **Krätzer**, *see* **pinzas** (1) ; (2) *see u.* **resorte**.

**TIRADA**, (1) hoisting or ascension of a cage, etc. ; (2) one complete hoist.

**TIRADOR**, (1) Torreviejas salt-works, Alicante, Sp. the workman who assists the **volvedor** in raising the salt (Molina) ; (2) slide-valve of a steam-engine, crank, etc. (Ponce de León).

**TIRANTE**, (1) b. constr. joist, *see u.* **viga** ; (2) mech. tie-rod of a boiler, etc. ; **tirantes**, ties of a pulley-frame, etc., *see* **barra** (9) ; ridge-pole, tie-beam, *see* **cumbrera** (1) ; (3) pump-rod or spear, *syn.* **asta** (3) **de bomba**, Mex. **cadena** (2), *see u.* **vástago** ; **t. maestro de desagüe**, main-rod, may be divided into **tirantes macizos en forma de biela** or **de simple barra redonda**, and **tirantes huecos en forma de tubo, de cruz** or **de celosía** (Molina) ; (4) **madre de t.**, Mex. timb. bearer, *see* **traviesa** (4) ; (5) Mex. timb. a large beam (**viga doble**), 8 m. long by 0·28 by 0·28 m. section, *see u.* **guarnición**, comp. **gualdra**, **gualdrilla**, **viga**, **vigueta** ; (6) eng. span (Ponce de León).

**TIRAR**, (1) to hoist or wind, *see* **tiro** (7) ; (2) to blast or shoot, *syn.* **dar fuego al barreno**, **dar taco**, **disparar el barreno**, **hacer saltar el**



barreno, quemar (5), equiv. Fr. allumer, tirer, Ger. sprengen, wegthun, *see* barrenar (2), *comp.* reventarse, volar ; (3) *t.* una labor, Calamahí, L. Cal. Mex. alluv. m. prospecting the ground, working (hacer tierras), and washing it by the gambucino, *see* cascajear, desmontar (2), planear.

**TIRO**, (1) Mex. shaft or pit, *see* pozo (2) ; *t.* con arrastre (2), de arrastre (2), de recueste (1), or ocinado, inclined shaft ; *t.* general, main shaft ; *t.* perpendicular, *t.* vertical, vertical shaft ; *comp.* contratiro ; (2) Las Alpujarras and Sierra Almagrera, Sp. winze, *see* clavada ; strictly speaking, a portion of a shaft, 83 to 85 m. deep, worked by a winch ; there are a succession of these to a depth of 300 m. or more ; (3) Ant. Col. air-shaft or rise, *see* contracielo (1) ; (4) *t.* de aire, air-blast, *see u.* horno (2) ; *t.* del aire, air-current, draught, *see u.* registro (3) ; (5) *t.* de mulas, set of mules ; (6) blast or shot, *syn.* disparo or salto (2) del barreno, voladura (if large), equiv. Ger. Explosion ; (7) hoisting or winding ; longitud del *t.*, depth of winding, *see* tirar (1) ; (8) rope used in hoisting or winding, *see* cable ; (9) Chile, blast. drill-hole, *see* barreno (1) ; (10) depth of a shaft (Acad.), *see* profundidad (1).

**TIRÓN**, tug or jerk given to wire-rope in hoisting.

**TISIS DEL MINERO**, miner's phthisis or consumption.

**TITANIO**, titanium ; for ores of titanium *see u.* agulhas.

**TÍTULO**, title (to a property, etc.) ; *t.* de propiedad, title to a mining claim.

**TIZA**, (1) ground chalk (creta) or whiting ; (2) finely divided gypsum (Aragón), *see* yeso ; (3) Chile, a mixture of ulexite [ $\text{Na}_2\text{O}$ ,  $2\text{CaO}$ ,  $\text{B}_2\text{O}_3$ ,  $16\text{H}_2\text{O}$ ] with much chloride of sodium, sulphate of soda, lime and sand ; "one of the most important of the world's sources of borax are the deposits of Ascotan and Maricunga, north of Copiapó, in Atacama, Chile, where ulexite, known locally as 'tiza,' occurs in old lake beds in layers alternating with layers of salt and salty earth" (Min. Ind.).

**TIZAR**, Mex. in the Iron Mountain (Cerro de Mercado), near Durango City, there is an enormous deposit of firestone (piedra de lumbre), mostly converted into a white powder of light pure silica, called tizar or piedra de pulir, used in glass-making, etc. (F. Weidner).

**TIZATE**, chalk, *see* creta.

**TIZO**, badly made charcoal which yields smoke on burning, *see* carbón (1).

**TIZÓN**, Mex. mas. bond, *see* diente (6).

**TLASCAL**, Mex. a kind of savin, very resisting, and used for the roof of pent-house (resguardo).

**TOBA**, (1) volcanic tuff or tufa, or light porous rock of volcanic ashes cemented together, and formed *in situ* or deposited by water, *syn.* tufo, tras, *see u.* tepetate (3) ; var. are *t.* basáltica, profídica, traquítica, etc. ; (2) *t.* caliza, calcareous tuff or tufa, *syn.* tosca (8), *see u.* caliche (4) ; (3) Ant. Col. chalk, *see* creta.

- TOBERA**, twyer of a smelting-furnace, etc., *syn.* **alcribis**, **muffla** (3), **soplete** (2), Peru, **tromba** (2), **tubera**, *see* **nariz** (2), (4) and (5), **repisa**.
- TOCA**, (1) Port. hole, burrow ; (2) Minas Geraes, Braz. quality of gold, *comp.* **ley** (3).
- TOCADO**, **DA**, pp. of **tocar**, Mex. in the **patio** process, "la torta esta tocada" when it has sulphate of copper in slight excess.
- TOCAR**, to try metals on a touchstone (**toque**), *see* **tocado**, **da**.
- TOCHO**, (1) prov. pole, *see* **palo** (1) ; (2) **hierro t.**, *see u.* **hierro** (1).
- TOCHUELO**, **hierro t.**, *see u.* **hierro** (1).
- TOCOCHIMBO**, Span. Am. blast-furnace (Ponce de León), *see* **horno** (2).
- TODOUNO**, coal as it comes out of the mine, "through coal" (Fr. **tout venant**).
- TOFO**, Dur. Mex. china-clay, *see* **arcilla**.
- TOLDO**, awning, *see* **vela** (3).
- TOLERANCIA**, deduction, allowance (in coinage).
- TOLLAS**, **TOLLOS**, turf-bogs consisting of soft and watery peat, *see* **turbera**.
- TOLVA**, (1) hopper of a gold-mill, etc., *syn.* Mex. **embudo** (2), *see* **buzón** (4), **chifladero** ; (2) ore-pass or -shoot, *see* **paso** (2).
- TOMA**, opening into a canal or drain ; **t. de una agua**, or **de una acequia**, Col. part of river, **quebrada**, stream or torrent where the water is taken off to the ditch—there is generally a small dam (**tupia**) in the river at this point.
- TOMÍN**, one-eighth of a **castellano de oro**, or one-third of an **adarme**.
- TONEL**, (1) barrel, *syn.* **barril** (1), *see* **barrica** ; **método de Freiberg** or **de toneles**, Freiberg or barrel process ; **t. de amalgamación**, amalgamating barrel ; (2) hoist. kibble, c.m. corf, *syn.* **barril** (2) **de extracción**, **caja** (6), **caldero** (3) (of wrought iron), **cuba** (2), **tina** (4), **vaso** (1) **de extracción** (generic), equiv. Fr. **cuffat**, Ger. **Kübel**, *see* **cubilete**, **ojo** (10), *comp.* **chalupa** (1) ; (3) vat, *see* **tina** (1) ; (4) **metales de t.**, pyritic ores with a little silver.
- TONELADA**, ton, *syn.* **salma** ; the ton of Castile = 2032·2 lb. avoird., that of Mex. and Span. Am. generally = 2028·88 lb. avoird., the metrical ton (**t. granadina** of Col.) = 1000 kil. or 2204·6 lb. avoird. ; **t. kilométrico**, one ton carried one kilometer.
- TONGA**, Ant. Col. difference of level between two points, whereby alluvial mines can be unwatered by making a ground-sluice [**canalón** (2)] and vein mines by means of adits ; **entrar t. or tajo**, to drain a mine artificially by running in a **canalón** (2), or an adit ; **mina de t.**, a mine on the top of a hill which can be artificially drained as above ; **t. de la mina**, the lowest practical point to which drainage can be carried by the above means ; *comp.* **encampane**. NOTE.—In Spain **tonga** = layer, *see* **tongada**.
- TONGADA** (or **tonga**), layer, *see u.* **balaste**.
- TOPACIO** (1), topaz, *syn.* **jacinto** (4) **occidental** ; **t. del Brasil**, reddish, rosy, or purplish yellow topaz ; *see* **gota** (3), **pingoas d'agua**, **rubí** (4),

safiras; (2) **t. ahumado**, dark brown rock-crystal; **t. de Hinojosa**, yellow rock-crystal, *syn.* **t. de Salamanca**, *see* **cuarzo**; (3) **t. oriental**, yellow corundum (**corindón**).

**TOPE**, (1) top, summit, apex; (2) mech. cam, *see* **cama** (3); (3) head or nut end of a lever; stop, stud or boss, etc., *see* **turrión** (4); (4) pump. catch, *see* **cuerno** (2); (5) **enlace á t.**, *see u.* **enlace** (2); (6) Ant. Col. a find of ore, bunch, *see* **bolsa** (1); **mina de t.**, *see* **matera**; **veta de t.**, a bunchy or beaded vein (Fr. **filon-en-chapelet**), *syn.* **veta de tambor** (3), *see* **huevo** (1); (7) transp. buffer of a railway-car.

**TOPO**, S. Am. league and a half, *see* **legua**.

**TOQUE**, (touch), (1) touchstone, *syn.* **pedra de t.**, *see u.* **jaspe** (1), **tocar**; (2) testing with (1); coin. assay, test, *see* **ensaye** (1) and (2), **tentadura** (2).

**TORBA**, *see* **turba** (1).

**TORCHO**, forged into very thin bars (of iron).

**TORCIDA**, wick of lamps, etc., *see u.* **mecha** (1), **pabilo**.

**TORMO**, tor, a high, pointed, isolated rock, *see* **peñasco**.

**TORNAMESA**, turntable, *syn.* **mesa** (3).

**TORNAPUNTA**, (1) timb. an inclined stay or prop which supports two parallel timbers, *see* Fig. 73, *comp.* **jabalcón** (2), **riostra** (1); (2) an inclined stull (**estemple**), *see* Fig. 74 (after Gillman); (3) **tornapuntas**, backstays of a pulley-frame [**horca** (1)], *syn.* Cartagena, Sp. **diagonales**, **riostras** (2); (4) the timbers which tie the backstays of a pulley-frame [**horca** (1)] to the uprights, *see u.* **barra** (9); (5) b. constr. prop, *see* **puntal** (1).

**TORNEAR**, to shape by turning on a lathe, or **torno** (4).

**TORNERO**, (1) windlass-man, or man at the winch or **torno** (2); (2) turner (of a lathe), *see* **torno** (4).

**TORNILLO**, (1) screw, screw-bolt, *see* **filete**, **rosca** (1), **tuerca**; **t. de madera**, wood-screw; **t. de filete á la derecha**, right-handed screw; **t. zurdo** or **reverso**, left-handed screw; **t. de gota de sebo** or **de cabeza redonda**, round-headed screw; (2) **t. para alzar cargas**, jackscrew, *see* **gato** (1); (3) **t. de banco**, vice or vise; **t. de mano**, hand-vice, or hand-vise.

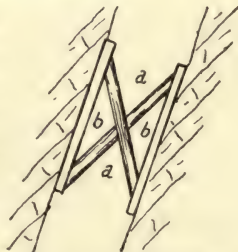
**TORNIQUETE**, mech. swivel (Ponce de León), *syn.* **alacrán** (2), **eslabón** (1) **giratorio**.

**TORNO**, (1) axle-tree, *see* **cabria** (1); (2) windlass, winch or hoist, *syn.* **burro** (3), **cabria** (2), **ciguëña** (2), **garrucha** (2), equiv. Fr. **treuil**, Ger. **Haspel**, *see* **mequineses** (2), **molinete** (1); **t. con acción directa**, direct-acting hoist; **t. con malacate**, whim; **t. con piñones**, geared winch or



FIG. 73.

Tornapunta (1).

FIG. 74.—Tornapunta (2)  
(after Gillman).

*a a*, tornapuntas forming cross-timbering; *b b*, zapatas, stringing- or wall-pieces.



hoist ; **t. de albardilla**, windlass with lagging [costillas (5)] on the centre drum in the form of a small pack-saddle (albardilla), *see* albardillado, **da** ; **t. de galgas** (2), winch with a smooth barrel ; **t. de mano**, hand-winch ; **t. de tambor**, windlass with a cylinder or drum ; **t. de vapor**, steam-winch or hoist, *see* chigre ; **t. mecánico**, winch driven by steam, electricity or other power. For parts of windlass, *see* árbol (2), cigüeña (1), cojinete (2), costillas (5), galgas (1), mesa (4) and (5), *u.* muertos, pastores, sombrero (3), soporte (5) ; for pique **t.**, *see* malacate (1). (3) **T. corrido**, mines of Gador and Almagrera, Sp. method of extracting with a winch by using five men, one or more of whom rest alternately, so that the extraction continues without loss of time (Molina) ; (4) lathe, equiv. Fr. *tour* ; (5) Almaden, Sp. sump, *see* caja (3).

**TORO** (bull), Mex. fire-damp, *see* grisú.

**TORRE** (tower), **t. de sondeo**, bor. derrick, shear-legs or hoisting tower, *see* caballete (7).

**TORRE-TORRE**, Jauja Valley, Peru, curious tower-like rocks formed by meteoric waters (E. J. Dueñas), *see* peñasco.

**TORREFACCIÓN**, (1) torrefaction, roasting (tostación), calcining (calcinación) ; (2) fire-setting, equiv. Fr. *torrefage*. **NOTE**.—This term was used by Schreiber, who translated Delius.

**TORRENTE DE ANZIN** (Fr. *torrent d'Anzin*), a large subterranean lake, 15 kilometres square, *see* estanque (4).

**TORRERAS**, Rio Tinto, Sp. met. poor coarse ore built up into the form of cones 10 to 15 feet in height, and about 20 to 30 feet apart. A fire is lighted in each of these, and the mixed lump and fine ore filled in between them—the whole heap [montón (1)] amounts to some 4,000,000 tons. After burning from four to six months, water is turned on the *torreras*, dissolving out the copper sulphate (Min. Ind.), *see* tostación, *comp.* telera.

**TORTA**, Mex. in the patio process, the flat heap of silver ore, in the condition of slime or pulp, and from 1 to 20 tons in weight, after the magistral and mercury have been added, *syn.* Bol. **cuerpo** (3), **trilla** (2), *comp.* **lamero** (2) ; **la t. esta caliente**, said when there is too great a chemical activity (due to excess of sulphate of copper) and consequent loss of mercury—copper precipitate, lime, alkaline carbonate or hyposulphite of soda is added, *see* calentura, **curtir** ; **la t. esta fría**, said when, for want of sulphate of copper, the action is delayed, magistral is added, *see* frío, **ía** (1), **curtir** ; **la t. ha rendida**, said when all the silver in the ore has amalgamated ; **t. rendida**, amalgam ready to undergo the washing operations.

**TORTERO**, Mex. man in charge of a torta.

**TORTUGA**, *see* *u.* **candil**.

**TOSA**, Mex. grinding space in the arrastre (3).

**TOSCA**, (1) Catorce, S. L. Pot. Mex. veins of altered diorite and amphibolitic porphyry [*see* pórfido (1)]. “D'une substance blanchâtre, ayant assez l'apparence du kaolin provenant de la décomposition des feld-

spaths. Ces veines, que ne sont pas, au moins dans quelques points, entièrement dépourvues d'argent, coupent, et font parfois changer de direction les filons exploités (Duport), *see* **arcilla**, **guiñar**. (2) N. Patagonia, Arg. a white calcareous marl, the uppermost formation in the Pampa Central (J. V. Siemiradzki), *see* **marga** (1); (3) Col. alluv. m. a bed of volcanic origin, superimposed on **sepé**, which latter lies on the pay-dirt [**cinta** (3)]; (4) Guadalcázar, S. L. Pot. Mex. lithomarge of a yellow ochre colour, figured by manganese; it occurs in limestone at the contact—the surface of the latter has a scoriaceous appearance (**achicharronada** of the miners); (5) Guadalcázar, S. L. Pot. Mex. local name for an altered granitic rock, especially limestone and gypsum, and into which the large masses of granite in the district are frequently changed for many hundreds of feet in the neighbourhood of mineral veins (H. F. Collins); (6) Guadalcázar, S. L. Pot. Mex. in the silver districts, much altered porphyry (S. Ramirez), *see* **pórfido** (1); (7) Mex. talc seam (Dwight), *see* **talco**; (8) calcareous tufa, *see* **toba** (2).

**TOSCO**, CA, adj. coarse, rough; **piedra tosca**, pumice-stone; **tosca estratificación**, coarse stratification.

**TOSTACIÓN**, roasting, *syn.* **quema** (1), **tostado**, **tostadura**, **tueste**, equiv. Fr. grillage, *see* **reverberación**, **torrefacción** (1), *comp.* **calcinación**. For heap roasting, *see* **telera**, **torreras**.

**TOSTADO**, met. roast, *see* **tostación**.

**TOSTADOR**, Mex. (1) roasting-furnace; (2) man in charge of (1).

**TOSTADURA**, roasting, *see* **tostación**.

**TOSTAR**, to roast, *see* **reverberar**, **tueste**, *comp.* **calcinar**.

**TOTUMA**, **TOTUMO**, Span. Am. a large dish made from a gourd; alluv. m. gourd used in collecting gold, etc., from **batea** washing, *syn.* Cauca, Col. **mate**.

**TOZA**, Span. Am. log, *see* **trozo**; **t. de caoba**, log of mahogany.

**TRABA**, (1) lap, overlap joint, *see* **solapa** (2); (2) *see* **llave** (10).

**TRABADOR**, carp. saw-set, *syn.* **triscador**.

**TRABAJADEROS**, Remedios and Santa Rosa, Ant. Col. veins that have been worked opencast (Gamba).

**TRABAJADO**, DA, adj. wrought (applied to metals).

**TRABAJADOR** (Port. **trabalhador**), workman, labourer, *syn.* **obrador** (1), **obrero**, **operario** (1), **peón** (1), **gente de polvillo** (1); day-labourer, *see* **jornalero**; *see* **cargador** (1), (2) and (4), **faenero** (2).

**TRABAJAR**, (1) to work a mine, etc., *syn.* **disfrutar**, **labrar** or **explotar una mina**, equiv. Port. **laborar**, **trabalhar**; for **t. de cielo**, *see* **cielo** (4); (2) to support, to sustain (of buildings or machinery).

**TRABAJO** (Port. **trabalho**), (1) work, *syn.* **labor** (1), **obra** (1); **día de t.**, working-day; **t. mecánico**, duty; **t. útil**, useful effect; **trabajos de desagüe**, pumping-works or operations; (2) mine-working, *see* **labor** (2), **obra** (2); **t. or t. de arranque**, working-place; **t. del antiguo**, Col. mine-working giving indications of having been worked in the time

of the Spanish **conquistadores**, or a little afterwards ; **t. del indio**, Col. mine-working with indications of having been worked prior to the conquest (Uribe), *syn.* **veta de hoyada** (2) ; **trabajos de reconocimiento**, exploratory workings ; **trabajos preparatorios**, such workings as cross-cuts, levels, rises and winzes, effected preparatory to stoping or winning, forewinning workings ; **trabajos transversales**, or **trasversales**, cross-cuts ; (3) a particular method of mine-working, *see* **labor** (3), **método**, *e.g.*, **t. de banca** (2) or **banco** (2), underhand stoping, *see* **rebajo** (2), **t. de cabeza** (6), **de cielo** (4) or **por testeras** (3), overhand stoping, *see* **u. testera** (3).

**TRABAL**, *see* **u. prego**.

**TRABAZÓN**, *mas.* bond, *syn.* **aparejo** (4), *see* **diente** (6), **u. verdugo**.

**TRABE**, beam, *see* **viga** (1).

**TRACCIÓN**, traction or haulage, *syn.* **arrastre** (1) **mecánico** ; **t. mecánico**, mechanical haulage, generally understood to be by fixed engines, *see* **u. cable** (1), **transporte**.

**TRAGANTE**, (1) hydr. m. sluice, *see* **canalón** (3) ; (2) ditch (**acequia**) by which a portion of a river enters a mill-dam [**presa** (1)] ; (3) **chimenea de t.**, *see* **u. chimenea** (4) ; (4) met. mouth of a shaft-furnace or furnace-top ; throat of a furnace ; (5) in a reverberatory furnace, the channel, passage or flue, generally inclined, leading to the chimney [**chimenea** (1)].

**TRAGAR**, to swallow ; **t. el fuego**, to swallow fire (of men burnt internally by explosions).

**TRAMO** (piece), (1) **t. rico**, rich shoot (of ore), *see* **clavo** (2) ; (2) Mex. portion of timbering in a shaft, *see* **u. cajón** (11) ; (3) Guan. Mex. second and third portion of timbering in a shaft, *see* **forro** (2) ; (4) span of a bridge (Ponce de León), *see* **luz** (4) ; (5) flight of stairs ; ladderway between two sollars (in shafts).

**TRAMPA** (trap), (1) sluice-gate, with long wooden lever for putting water on or off a wheel, *comp.* **sangradera** (1) ; (2) gold-mill, mercury trap.

**TRAMPAL**, quagmire ; **trampales**, turf-bogs of little consistency, *see* **turbera**.

**TRAMPILLA** (dim. of **trampa**), trap-door of an ore-chute [**paso** (2)], etc.

**TRANCA**, Mex. square set of timbers (Dwight), *see* **u. cuadro** (1).

**TRANCADA**, (1) trench, *see* **zanja** (1) ; (2) Almería, Sp. an inclined gallery (**galería trancada**) or shaft made in steps [**escalones** (1) or **trancos**], *comp.* **mequines** (1).

**TRANCADO**, *DA*, pp. of **trancar** ; for **galería trancada**, *see* **trancada** (2).

**TRANCO** (stride), **trancos**, long steps [**escalones** (2)] cut in inclined shafts, or made of cross-timbers, *see* **u. gavia**, **trancada** (2).

**TRANQUE**, Chile, dam, *see* **presa** (1).

**TRANQUIL**, (1) arch. vertical or plumb-line, (2) *see* **u. rampa** (2).

**TRANSFORMADOR**, el. transformer.

**TRANSITO**, *see* **u. servidumbre**.

**TRANSPORTADOR** (or **trasportador**), surv. compass fixed in a round case for plotting by the German system (Gillman), *see* **brújula**.



**TRANSPORTAR** (or *trasportar*), to transport, convey, haul, *syn.* *llevar*.

**TRANSPORTE** (or *trasporte*), transport, haulage or conveyance, *syn.* acarreo (1), arrastre (1), conducción, llevada, *see* tracción; t. aéreo, wire-rope transport, *see* vía (3); t. á hombros, *see* paseo; t. con trincos, transport by sledges; t. interior or subterráneo, underground haulage; t. por rodadura, transport by wheels or by rolling, *e.g.*, wheelbarrows, German *Hund* and wagons; t. circular, method of loading and unloading cages at the inset or plat, when the latter is double [*enganche doble*]. In Belmez, Sp. the name *media luna* is given to the circular gallery which surrounds the shaft (Molina); t. y extracción (1), conveyance and hoisting.

**TRANSVERSA**, *see* *trasversa*.

**TRANSVERSAL** (or *trasversal*), adj. trabajo t., cross-cut, *see* *crucero* (1); veta t., cross-vein or lode, *see* u. legítimas.

**TRANSVERSAL** (or *trasversal*), cross-cut, *see* *crucero* (1); transversales de recorte, Palencia, Sp. c.m. a wagon-road common to several contiguous seams, from which transversales are driven to cut the remaining seams (Molina), *see* *recorte* (2) and (3).

**TRANSVERSO**, *see* *trasverso*.

**TRANVÍA**, tramway.

**TRAPICHE**, Chile, a primitive form of Chilian mill, edge-runners or edge-rolls, consisting of two stones, of which the upper one is fastened to a long pole, *see* Fig. 75 (after Egleston); the large revolving stone is generally made of granite, about 2 m. in diameter, with an edge of 0.40 m. wide, weighing between 3 and 4 tons. The inside diameter is slightly smaller than the outside, so it inclines somewhat towards the centre. The bed is formed of hard stones. Sometimes two wheels are used, placed at different distances from the centre. The crushing is sometimes done dry, but generally wet. The ground ore, being washed out, is allowed to settle, and is then sent to the *arrastre* (3). There is a post in the centre of the grinding space—the horizontal arm is pivoted on a heavy piece of metal or hard wood set in the post. The next improvement was to put iron tires on the high revolving stone wheels (Egleston), *comp.* *pisón* (3). NOTE.—In Tolima, Col. the name *trapiche* is sometimes incorrectly applied to the stone-breaker [*quebrantador* (1)].

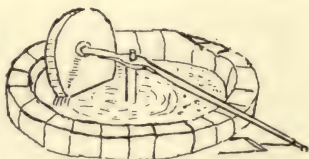


FIG. 75.—Trapiche (after Egleston).

**TRAPICHERO**, (1) Chile, the man in charge of a *trapiche*; (2) Chocó, Col. a strong and durable timber (*madera*).

**TRAQUITA**, trachyte, *see* *chiluca*, *lengüebuey*, *panizo* (2).

**TRAS**, tuff or tufa, *see* *toba* (1); mortero de t., a mixture of pulverised tufa, quicklime and brick powder; it is used without sand for works destined to resist a strong hydraulic pressure (Gillman), *see* *argamasa* (1).

**TRASCONEJADOS**, *see u. quedar.*

**TRASDÓS**, (1) extrados, back of an arch (*arco*), or vault; (2) mas. inner side or back of hewn stones, *see* Fig. 38; (3) *sierra de t.*, *see u. sierra* (2); (4) *ajuste de t.*, *see u. ajuste.*

**TRASDOSADO**, *see* Fig. 8, *u. arco.*

**TRASERA**, met. back of a furnace, *comp. delantera.*

**TRASLAPAR**, to overlap, *see solapar.*

**TRASPALAR**, to shovel; Mex. in the *patio* process, to turn the *torta* with a shovel, *see voltear.*

**TRASPALEO**, Mex. the turning of the *torta*, *see traspalar.*

**TRASPASAR**, to transfer (a deed, etc.), *see enajenar.*

**TRASPASO**, conveyance, transfer (of a deed, etc.), *see enajenación.*

**TRANSPORTADOR**, *see transportador.*

**TRANSPORTE**, *see transporte.*

**TRASVERSA** (or *transversa*), transp. sleeper, *see durmiente* (1).

**TRASVERSAL**, *see transversal.*

**TRASVERSO** (or *transverso*), Col. timb. bearer, *see traviesa* (4).

**TRATAMIENTO**, met. treatment, *see beneficio* (3).

**TRAVERSIAS**, Arg. deserts separating settlements, *see desierto.*

**TRAVÉS**, de *t.* or al *t.*, adv. across, *e.g.*, *labor á t.*, *método á t.* or de *t.*, transverse working or cross-cut method, *see u. labor* (3).

**TRAVESAÑO** (or *atravesano*), (1) cross-timber; transom, *see travesero* (1), *u. tarango*; (2) timb. cap-piece, *see capa* (4); (3) timb. dividing-piece, *see atravesado* (2); (4) transp. sleeper, *see durmiente* (1).

**TRAVESCAJAS**, cross-cut (Chalon), *see crucero* (1).

**TRAVESERA**, **TRAVESERO**, (1) cross-piece of metal or wood, *see travesano* (1); (2) step or rung of a ladder, *see escalón* (1).

**TRAVESÍA**, Ant. Col. cross-cut, *see crucero* (1).

**TRAVESSA**, *see traviesa* (3).

**TRAVIESA**, (1) cross-cut or cross-gallery, more or less perpendicular to the direction of the main gallery, *see crucero* (1); (2) timb. dividing-piece, *see atravesado* (2); (3) transp. sleeper (Port. *travessa*), *see durmiente* (1); (4) timb. bearer, bearing-beam or bearing-stemple, (U.S.A.) *reacher*, *syn. descanso* (3), Mex. *gualdrilla*, *madre* (3) or *madre* (3) *de tirante*, Col. *trasverso*, equiv. Fr. *pontal*, Ger. *Tragestempel*, *see contramadre.*

**TRAZADOR**, Mex. assistant underground captain who looks after the men paid by the day (*paradas rayadas*), and the work of the *peons*, *see u. minero* (3).

**TRAZAR**, (1) to trace, *see calcar*; (2) to draw the first sketch or plan; (3) *see u. tumbe.*

**TRAZO**, sketch, plan, design.

**TRECHEO**, passing of ores or waste from one *peon* (*zafrero*) to another in baskets, *see gavia*, *comp. cuerda* (4), *hormiguilla* (1), *ziquitumba.*

**TRECHERO**, Calamahí, L. Cal. Mex. alluv. m. "se dice en una labor que el oro es 'trechero' cuando con regularidad van apareciendo á distancia sus mejores depósitos" (J. M. Ramos).

**RECHO** (distance), **trechos de lechuguilla**, Mex. a certain length of small rope made of **ixtle** (2), *see u. saco* (1); the cost of one **trecho**, 50 m. long, twisted into a rope  $33\frac{1}{2}$  m. long, is \$5, and lasts three weeks in a dry situation, and from twelve to fifteen days in a wet one (S. Ramirez), *see cuerda* (1).

**TREMADAL, TREMEDAL**, marsh, morass, *see pantano* (1), **tembladeros** (2); elastic turf-bog, *see turbera*.

**TREN**, rail. train.

**TRÉPANO** (from F. **trépan**), bor. cutting-tool, *see u. barrena* (2), **sonda** (1); **t. compuesto**, equiv. Fr. **trépan composé**; **t. de aleta**, equiv. Fr. **trépan á tétón**, Ger. **Meisselbohrer mit einer Zitze**, *see Fig. 16*; **t. de cinta**, worm auger, equiv. Fr. **trépan rubané**, Ger. **Spiralbohrer**; **t. de cuchura**, auger, open auger, auger-nose shell, open scoop, wimple or wimble, gouge-bit, *syn. barrena* (4), **cuchara** (2), **taladra**, **taladro** (5), equiv. Fr. **tarière à glaise**, **cuiller**, Ger. **Schapper**; **t. de horquilla**, equiv. Fr. **trépan fourchu**; **t. de orejas** (1), bit or chisel with wings, equiv. Fr. **trépan à oreilles**; **t. simple** or **sencillo**, straight bit or chisel, equiv. Fr. **trépan simple**, Ger. **Meisselbohrer**.

**TREPIDACIÓN**, *see u. tina* (1).

**TRIANGULACIÓN**, surv. triangulation.

**TRIANGULO** (triangle), Mex. cog of a stamp (G. F. Lyon), *comp. cama* (3), **diente** (2).

**TRIBUNAL**, **t. de minera** or **de minería**, mining tribunal; Mex. a Supreme Council of Mines or "Real Tribunal del importante cuerpo de Minería de Nueva España" was established in 1777; this was followed by the publication of the **Ordenanzas**, and the creation of thirty-seven **Diputaciones** (H. G. Ward).

**TRIFACEADO, DA**, adj. **sistema trifaceada**, el. three-phase system.

**TRIFURCACIÓN**, *see u. desvío* (2).

**TRILHO**, Port. rail, *see carril* (3).

**TRILLA**, Mex. (1) heap of ore, *see montón* (1); (2) heap of slimes on the patio (1), *see torta*.

**TRILLO**, Span. Am. footpath, trail, *see senda*.

**TRINCHA**, (1) Span. Am. socket-chisel, cutting-gouge, *see cincel* (1), **gubia**; (2) Mex. piled waste [**desecho** (3)] used for walling levels, *see relleno* (3); (3) Mex. coke-fork (Dwight), *syn. horquilla* (2), **yelmo**, *see cok*.

**TRINCHAR**, Col. to construct **trinchos**, especially in the end of an adit (Uribe); to dam.

**TRINCHERA**, (1) trench, *see trincho* (1), **zanja** (1); (2) Mex. a roughly stacked pile of rock or ore (Dwight), *see montón* (1).

**TRINCHO**, Col. (1) trench [**trinchera** (1)] or breastwork (**parapeto** or **pretil**) (Uribe), *see talabordón* (2); (2) dam [**dique** (1)] of wood, earth and stone, or of stone only, to detain or vary the direction of a current of water (Uribe); alluv. m. in deep portions of a river, two rows of beams (**vigas**), strengthened by large stakes (**estacones**) and interlacing



branches, placed across the river, forming a sort of dike. By means of two poles, sometimes united in the form of a ladder, placed at a moderate inclination and lying on the bottom, the *zambullidores* descend, and bring up *bateas* of gravel from the bottom (C. A. Echeverri and M. Uribe), *see* *mama*, *presa* (1), *comp.* *buzo*, *cerco* (5), *talabardón* (2), *tapón* (3), *tupia*.

**TRINEO**, sledge, *see* *rastra* (1), *u.* *transporte*.

**TRINQUETE**, mech. pawl or ratchet, *see u.* *fiador* (2); *rueda dentada de t.*, pawl and ratchet-wheel. **NOTE**.—The terms pawl and ratchet are often used synonymously; strictly speaking, the latter should be confined to the teeth of the ratchet-wheel into which the former falls; if the pawl moves the ratchet it is a pallet; *trinquete con fiador* = ratchet and pawl.

**TRISCADOR**, mech. saw-set, *see* *trabador*.

**TRITURACIÓN**, mech. prep. stamping, grinding or crushing, *see* *pulverización*; *t. á mano*, crushing by hand.

**TRITURADOR**, pulveriser, *see* *pulverizador*.

**TRITURADORA**, rock-breaker, crushing-machine, *see* *pulverizadora*.

**TRITURAR**, to crush or break up ore, *see* *pulverizar*; *t. con cilindros*, to crush with rolls.

**TROCAR** (to exchange), *t. la batea*, Ant. Col. to pass *bateas* full of gravel and earth with great rapidity from hand to hand, the peons being placed *en fila* or in line (Uribe), *comp.* *gavia*.

**TROCHA**, (1) narrow path (*senda*), across a high road; (2) S. Am. a path cut through forests, etc., for surveying or other purposes.

**TROJE** (granary), *trojes de metal*, Huitzucó, Guerr. Mex. deposits of quicksilver ores, mixed with rock *débris*, filling natural vertical holes in gypsum—so called from the supposed resemblance to the cylindrical adobe buildings used in that region for storing maize, *see* *mercurio* (2).

**TROMBA**, (1) water-spout, *see* *bomba* (4); (2) Peru. met. twyer, *see* *tobera*.

**TRÓMEL**, mech. prep. trommel, *see u.* *criba* (2); *t. de desenlodar*, de *deslodar* or *desenlodador*, cleaning trommel, equiv. Fr. *trommel-débourbeur*.

**TROMPA** (trumpet), (1) water-blast (Fr. *trompe*), *syn.* *roncadera*; (2) Mex. met. the "nose" of cooled slag, formed by introducing a wet bar of iron through the twyer, when the latter does not project beyond the inner wall of the furnace, *see* *entromparse*, *comp.* *nariz* (4); (3) *t. cónica*, vent. expanding stack or chimney of a Guibal or other fan, *syn.* *chimenea* (1) *cónica*.

**TROMPO**, *see u.* *viaje*.

**TRONA**, *see* *natrón*.

**TRONCO**, (1) trunk of a tree, *see* *pie* (9); log (*trozo*), *see* *leño* (1), *troza*; (2) Mex. team of horses or mules (Dwight). **NOTE**.—In Spain, hind pair of horses in a coach (Velázquez).

**TRONERA**, (1) Mex. chimney ; channel ; flue (Dwight) ; (2) troneras, Cerro de Pasco, Peru, holes in the brick cone or chimney used in heap coking (E. D. Canseco).

**TROZA**, trunk of a tree to be sawn into boards (Velázquez), *see* tronco (1).

**TROZADOR**, Col. cross-cut saw, *syn.* sierra (2) de través, or de trozar, Mex. sardina.

**TROZAR**, *see u.* sierra (2).

**TROZO**, piece or part of a thing cut off ; t. de madera, log of wood, *see* tronco (1) ; rail. portion of a line, trunk (Fr. tronçon) ; section of work.

**TRUC** (from Engl. truck), *see u.* plataforma (4).

**TRUCHA**, crane, *see* grúa.

**TRUEQUE**, Mex. truck or trolley (for tramway-bucket) ; truck of a railway-car (Dwight).

**TRULLA**, mas. trowel, *syn.* llana (1), paleta (6), palustre, *see* paletada, plana.

**TUBERA**, twyer, *see* tobera.

**TUBERÍA**, tubing ; series or set of pipes or tubes, *see* cañería (2), u. desagüe (1) ; t. aspirante, suction tubing ; t. de aspiración, set of suction-tubes ; t. de descarga, pump. delivery tubing ; t. de sondeo, bor. tubing, *see* entubado (1) ; t. impelente, discharge tubing.

**TUBO**, (1) tube or pipe, *see* arcaduz (1), atanor, u. cañería, caño (2), cañón (1), u. conducto ; t. agotado, exhaust-pipe ; t. á vapor, steam-pipe ; t. de aspiración, suction-pipe ; pump. wind-bore ; t. de descarga, delivery-pipe ; t. de educción, exhaust-pipe ; t. de enchufe, suction-hose ; t. de equilibrio, bor. Chaudron's equilibrium tube, or central tube attached to the false bottom (Fr. cuvette) ; t. de manguera, hose-pipe ; t. de sobrante, waste-pipe ; t. de ventilación, vent. air-pipe, *see* caja (20) ; tubo-estuche, core tube of a diamond drill (Fr. tube-carottier) ; tubos elevadores, pumps or pump-trees ; t. de vidrio, lamp-chimney or tube, *syn.* bomba (6), bombilla (1), *see u.* cañón (1) ; (2) t. de humo, smoke-stack ; (3) eng. tunnel, *see* tunel.

**TUCURABABI**, Matapé, Son. Mex. altered granite (granito). NOTE.— Name probably of Apache origin ; *see* tucurubay.

**TUCURUBAY**, a kind of gravel (Lucas), *see* tucurababi.

**TUECA**, TUECO, cavity made by wood-lice in timber, *see* comején (1).

**TUERCA**, nut or female screw, *syn.* hembra (3), matriz (2), equiv. Minas Geraes, Braz. botão, Port. porca.

**TUESTE**, roasting, *see* tostación.

**TUFO**, tuff, *see* toba (1).

**TUMBA**, t. de montes, Span. Am. felling of trees.

**TUMBADOR**, Span. Am. woodsman (Ponce de León).

**TUMBAGA** (pinchbeck), Col. an alloy of equal parts of gold, silver and copper, *comp.* tumbago.

**TUMBAGO**, Ant. Col. gold of low grade, *comp.* tumbago.

**TUMBAR**, (1) Mex. to break ground, win or get, *see* arrancar ; t. el cascajo, *see* cascajear ; t. las tierras de asiento (7), to win a deposit of

- gravel with a hard floor ; (2) **t. monte**, Mex. to cut down trees or forests ; (3) **t. la mina**, Ant. Col. to direct the workings in such a way that, from want of proper security, they are destroyed.
- TUMBE**, Mex. breaking ground, winning or getting. In case of hard rock it consists of the following operations : (a) **trazar** (3) **el barren**, fixing the position of the borehole, (b) **pintarlo**, marking it with a gad [*see u. barra* (6)], (c) **abrirlo**, boring it, (d) **cargarlo**, charging it, and (e) **pegarlo**, firing it, *see* **arranque** (1), **derribo**.
- TÚNEL** (from Engl.), tunnel or gallery ; properly speaking, a tunnel open to the surface at both ends, *syn.* **mina** (4), **tubo** (3).
- TUPIA**, Ant. Col. a dam ; structure of earth, stone or wood, which accidentally stops the course of a current of water (Uribe), *see u. madrino*, **presa** (1), *comp.* **talabordón** (2), **tapón** (2), **trincho** (2).
- TUPIAR**, Ant. Col. to make dams (**tupias**) ; to dam up (Uribe).
- TUPIDO**, **DA**, adj. and pp. of **tupir**, closely woven (of screens).
- TUPIDOS**, *see* **encostillado**.
- TURBA**, (1) turf, peat, sometimes used as fuel, *syn.* Peru, **champa**, **torba**, *comp.* **yareta** ; (2) dung mixed with coal and moulded in the form of adobes, used as fuel in brick-kilns (Acad.).
- TURBAL**, (1) turf-bog, *see* **turbera** ; (2) collection of peat or fuel.
- TURBERA**, peat-bog, turbary, *syn.* **manchón de turba** (1), **turbal** (1), *see* **pantano** (1), **tollas**, **trampales**, **tremedales**.
- TURBINA**, turbine.
- TUREGA**, Ant. Col. **una carga en t.**, a load carried between two mules.
- TURMALINA**, tourmaline, *see* **chorlo** ; **t. azul** = indicolite ; **t. roja** = rubellite
- TURNO**, Mex. shift of work (Dwight), *see* **relev**.
- TURQUESA**, turquoise, *see* **xihuitl**.
- TURRIÓN**, (1) gudgeon, *see* **guijo** (2) ; (2) crank-pin, *see* **botón** (1) ; (3) wiper, cam, *see* **cama** (3) ; (4) stud (Ponce de León), *see* **tope** (3).
- TUYA**, **THUYA**, white or red cedar (**cedro**).
- TZINAPU**, *see* **obsidiana**.
- UBICACIÓN**, situation (of a mine, etc.).
- UCHA**, S. Am. llama dung, *see* **taquia**.
- UCHANCHACADO**, *see u. caliche* (1).
- ULE**, rubber-tree (Velázquez) ; for rubber, *see* **hule**.
- ULLA**, **ULLERA**, **ULLERO**, *see* **hulla**, **hullera**, **hullero**, respectively.
- ULLITA**, *see* **antracita**.
- UMBRAL**, (1) b. constr. door-sill ; (2) arch. lintel ; (3) timb. Col. cap-piece, *see* **capa** (2).
- UMPE**, *see* **humpe**.
- UÑA**, (1) mech. claw or hook ; (2) cam, *see* **cama** (3).
- UNDULACIONES**, geol. undulations (of beds, etc.), *syn.* **ondulaciones**, *comp.* **pliegue**.



**UÑETA**, chisel [*cíncel* (1)] with a wide straight or curved mouth, used by stone-cutters (Acad.).

**ÚNICA CONTRIBUCIÓN**, *see u. contribución*.

**UNIDAD**, mech. unit.

**UNIÓN**, mech. coupling (of wire-rope, pipes, etc.); carp. clamping joint; *u. de gozne*, hinged joint, *see gózne* (1).

**UNIR**, to join, couple, clamp, etc.

**URANIO**, (1) uranium; (2) uranium ore, *e.g.*, torbernite or uranmica (Ger. *Uranglimmer*); *see uranopícco*.

**URANOPICCO**, uraninite or pitchblende (Ger. *Uranpecherz*), *see uranio* (2).

**URAO**, Gay-Lussite [ $\text{Na}_2\text{CO}_3$ ,  $\text{NaHCO}_3$ ,  $2\text{H}_2\text{O}$ ], a mineral resulting from the spontaneous evaporation of waters containing carbonate and bicarbonate, found in Lagunilla in Maracaibo = *trona*, found in Fezzan and Barbary, and "summer soda" of Ragtown, Nevada, U.S.A., *comp. natrón, tequezquite*.

**URGUE**, Ant. Col. (1) clay, *see arcilla*; (2) flucan or clay salband separating the vein from the walls or "country," *see cuarache, u. guarda* (1).

**ÚTILES** (utensils), Col. tools, *see herramienta* (1).

**UTILIDAD**, profit, *see ganancia*.

**VACIA**, geol. wacke; *vacigris*, *grauwacke*.

**VACIADERO**, dump, waste-dump, (Austral.) mullock-dump, c.m. spoil-bank, *syn. acopios*, Mex. *boleo* (3), *caballero* (Fr. *cavalier de déblais*), Mex. *desatierre* (2), *escombrera*, *terrera*, Mex. *terreros* (3), equiv. Fr. *halde de déblais*, Ger. *Halde*, *comp. botadera* (2), *cancha* (3).

**VACIADOR**, (1) dumper of waste; (2) one who dumps slag-pots (Dwight) (3) moulder.

**VACIAR**, (1) to dump, to tip, equiv. Fr. *vider*, Ger. *stürzen*; (2) to cast, to mould; (3) to discharge (of rivers), *see desaguar* (2); hydr. to sluice off (Ponce de León).

**VACÍO**, *ÍA*, empty; *freno al vacío*, vacuum-brake.

**VACÍO**, (1) vacuum, *see u. vacío, ía*; (2) mould for casting metal, *see molde*.

**VACISCO** (or *bacisco*, Acad.), Almaden, Sp. the fragments remaining after breaking the ore (cinnabar) for charging the furnaces (Guim); smalls or fines moulded into *adobes* for the furnaces (Acad.); small ore, *see menudo*, *comp. china* (2), *metal* (4), *requiebro* (2); *baciscos*, pebbles or fragments of gangue, containing some useful mineral, *syn. gandingas* (2) (Ezquerria).

**VADERA**, **VADO**, ford (of a river), *syn. botadero* (1), *see u. pasa* (4).

**VAGÓN** (from Engl.) wagon, *see carro* (2); *v. de báscula*, *v. volcador*, *volquete* or *de volquete*, dumping-car or tipping-wagon, *comp. basculador*; *v. de pico*, front- or side-tipping wagon.

**VAGONERO**, trammer, *see carretero* (1).

- VAGONETA** (dim. of *vagón*) (1) transp. small open car ; trolley, *syn.* *cangrejo* ; (2) Cartagena, Sp. bucket of ropeway, *see u. balde*.
- VAGUADA**, line of intersection of two opposite slopes (Ger. *Thalweg*) ; stream-channel (Dwight) ; watershed or divide, *see vertiente* (3).
- VAIVÉN**, (1) mech. reciprocating movement, *see u. mesa* (1) ; (2) Span. Am. swinging hammer (Ponce de León), *see martillo*.
- VAL** = contraction of *valle*.
- VALAIS**, lumber, 12 feet long, 4 inches wide, and  $2\frac{1}{2}$  inches thick (Acad.), *see tabla*.
- VALIENTE**, Mex. a substitute (G. F. Lyon).
- VALLA**, c.m. hoist. barrier, *see barrera* (5).
- VALLAR**, to fence, hedge, enclose with stakes, etc., *see cercar*.
- VALLE**, vale, valley, *syn. val*, *see escobio*, *u. vega* (1).
- VALUACIÓN**, valuation, estimate of cost, *see presupuesto*.
- VÁLVULA**, valve, *syn. ventalla*, *see émbolo* (2) and (3), *sopapo* ; *v. chata* de resbalón, flat slide-valve ; *v. de admisión*, inlet-valve ; *v. de arandela*, clack-valve ; *v. de aspiración*, suction-valve ; *v. de bola*, *v. esférica*, *v. postillón*, ball-valve ; *v. de campana* or *de doble asiento* (2), double-beat valve ; *v. de chapaleta*, or *de charnela* (1), clack-valve ; *v. de cierre*, stop-valve (Fr. *soupape d'arrêt*) ; *v. de corredera* (2), slide-valve ; *v. de cuello*, throttle-valve ; *v. de desahogo del vapor*, blowing-off valve ; *v. de descarga* (3), delivery-valve ; *v. de distribución*, slide-valve ; *v. de educción*, exhaust-valve ; *v. de garganta* (2), throttle-valve ; *v. de impulsión*, delivery- or discharge-valve ; *v. de mariposa* (2), butterfly-valve ; *v. del obturador* (1), trap-valve ; *v. de movimiento determinado* = Fr. *soupape gouvernée*, *e.g.*, Riedler's ; *v. de seguridad*, safety-valve ; *v. roncadera*, snifting-valve ; *see cara* (2).
- VANADATO**, vanadinite [(PbCl), Pb<sub>4</sub>(VO<sub>4</sub>)<sub>3</sub>], found in Cardonal, Zimapán, Hid. Mex.
- VAPOR**, (1) steam ; *v. agotado*, exhaust steam ; *v. estrangulado*, wire-drawn steam ; *v. perdido*, waste steam (Ponce de León), *see u. compresión* ; (2) steamboat, steamer ; (3) *máquina de v.*, steam-engine ; (4) *caballo de v.*, horse-power, *see caballo* (11) ; (5) Mex. foul air in a mine—a damp worse than *bochorno* (1), for, besides extinguishing lights, it is pestilent ; it proceeds from the quality of the formation (*terreno*), and want of ventilation in the caverns of mines (Gamboa).
- VAPORIZADOR**, horizontal boiler [*caldera* (2)] used for evaporating salt water in Piccard's method, *see calorífero*.
- VAQUETA**, *see u. cuero*.
- VARA**, (1) rod (of an engine, etc., *see vástago*) ; *v. de agrimensor*, or *de medir*, surv. measuring-rod ; *v. mágica*, divining-rod, *see hurga* ; (2) Spanish yard of about thirty-three British inches, but it varies in different countries, *e.g.* :

	Metres.	Feet.	Inches.
Argentine Republic . . . . .	0·8667	2·843	34·122
Brazil . . . . .	1·1048	3·624	43·496

	Metres.	Feet.	Inches.
Central America . . . . .	0·9874	3·239	38·874
Chile, Peru and Portugal . . . . .	0·8475	2·780	33·366
Colombia . . . . .	0·8000	2·624	31·496
Cuba and Venezuela . . . . .	0·8480	2·782	33·386
Curaçao . . . . .	0·8477	2·781	33·374
Mexico . . . . .	0·8382	2·750	33·000
Paraguay . . . . .	0·8636	2·833	34·000
Spain (Burgos) . . . . .	0·8359	2·742	32·909
Spain (general) . . . . .	0·8489	2·785	33·423
Uruguay . . . . .	0·8850	2·904	34·848

NOTE.—The **vara** of Burgos is divided into 3 feet, the foot in 12 inches, the inch in 12 lines, and the line in 12 points (**puntas**); the **vara granadina** (Col.) is divided into 4 quarters (**cuartas**), and the **cuarta** into 2 eighths (**octavas**). The above measurements are based on those given by Duque and Spon. (3) Handle of a wheelbarrow, *see* **carreta** (2); (4) **varas**, Hualgáyoc, Peru, timb. small polings used in lagging (**revestimiento**), from 4 m. long to 0·05 m. diameter (**Santolalla**).

**VAREJÓN**, timb. pole, used for lagging, etc., *see* **revestimiento**.

**VARILLA** (small rod), (1) boring-rod, *syn.* **barra** (4), **vástago de sondeo**; **v. del émbolo**, piston-rod, *see* **alargadera**, *u.* **vástago**; (2) transp. switch, *see* **cambio** (1); (3) mech. spindle, pivot, *see* **gorrón** (1); (4) blast. shooting-needle (Chalon), *see* **aguja** (4); (5) Ant. Col. narrow piece of sawn wood cut from boards [**tablas** (1)] or planks (**tablones**), *e.g.*, 11 feet by 4 inches by 2½ inches; (6) long and thin bar of iron, *comp. u.* **cabilla**.

**VASIJA**, vessel; butt or cask; bucket or skip of a wire ropeway; **v. de extracción**, any vessel used in extracting ores, etc., as skip, kibble, cage; **v. de palma**, basket made of palm leaves, sometimes used by **muchachos de gavia**; **v. alambique**, circulating condenser, *see* **vaso** (1).

**VASO**, (1) vessel, *see* **vasija**; **v. de extracción**, kibble, *see* **tonel** (2); those used at Guan. Mex. are cylindrical in shape and are made of tanned hide (**vaqueta**), weighing when full 120 **arrobas** each, and provided with two valves (for filling and emptying them), and also a safety arrangement (S. Ramirez); (2) Mex. met. a furnace; (*a*) a small **adobe** furnace lined with clay, etc. To get a strong draught the **vasos** are built against a steep bank, and a flue is run up the hill-side. The first part is made of **adobes**, the upper portion often of split timbers, daubed with clay, and covered with dirt (Eng. and M. J.), *syn.* **hornito** (1). (*b*) A cupelling furnace, *syn.* **horno** (2) **de copelación**, *comp.* **mufla** (2); (*c*) a reverberatory furnace for smelting rich ore; (*d*) Tepecalá, Aguascalientes, a copper refinery furnace, circular, 1·25 m. inside diameter, covered with a semi-spherical **bóveda** (3) or arch (S. Ramirez); (3) met. shaft of a furnace, *see* **cuba** (4); (4) met. crucible of a blast-



furnace, *see* **crisol** (2); (5) Mex. met. receptacle for molten metal in front of a furnace, *see* **reposadero** (2).

**VÁSTAGO**, mech. rod, *see* **barra** (4), **vara** (1), **varilla** (1); **v. de bomba**, pump-rod, *see* **tirante** (3); **v. de sondeo**, boring-rod; **v. de una válvula**, valve-stem.

**VATIO**, el. Watt (Acad.).

**VEGA** (Port. **veiga**), an open plain (*see* **llano**); meadow; borders of a river; **vegas**, alluv. m. low-lying alluvial ground near a river, *comp.* **playas** [*u.* **playa** (1)]; Col. a small valley (Muñoz), *see* **valle**.

**VEHÍCULO**, (1) vehicle, carriage; (2) el. conductor, *see* **conductor**.

**VEIA**, (1) Port. vein, *see* **veta** (1); (2) **veias** or **veios** (2), Braz. ordinary placers (*see* **placer**) the beds of which are younger than the channels in which they occur (Antonil), *syn.* **madre** (7), *comp.* **grupiaras**, **taboleiros** (2).

**VEINTENO**, twentieth; the tax of one-twentieth, *comp.* **quinto**; V. Restrepo, writing of the territory of Barbacoas, Col., says: "consta que el derecho de veinteno pagado en 1686 en Popayán, por solo el oro de Barbacoas, valió 3692 castellanos, cifra que representa una producción de mas de 700 libras de oro."

**VEIO**, (1) Port. a vein of marble; (2) Braz. *see* **veia** (2).

**VELA**, (1) watchman, night-guard, *see* **velador**; (2) candle, *syn.* **candela** (1); **v. de cera**, wax candle, *see* **bujia** (1); **v. de esperma**, sperm candle; **v. de sebo**, tallow candle—those used in mines are usually of this kind, and weigh from 1 to 2 ounces each, ordinarily 11 to the pound; *see* **cabo** (4); (3) awning, *see* **toldo**; (4) naut. sail, sheet; (5) wing or arm of a windmill (**molino de viento**).

**VELADA**, Ant. Col. the third part of the night, during which time a watchman (**velador**) is in the mill to see that the blanketings [**paños** (1)] are not robbed (Uribe).

**VELADOR**, (1) Mex. watchman or guard who takes care of the mine day and night; *syn.* **vigía**, **vigilante**; Ant. Col. watchman in mine or mill (*see u.* **velada**), *see* **guardaminas** (1), **vela** (1); (2) candle-holder, generally of wood, *see* **candelero**.

**VELAR**, to watch.

**VENA**, (1) metalliferous vein, *see* **veta** (1); small vein or branch, *see u.* **aguja** (6) and **acostarse**. NOTE.—Sometimes = a vein within a vein. (2) Bed or seam, *e.g.*, Bilbao, Sp. compact earthy red hematite (the purest); a var. of hematite of a dark bluish purple colour, inclined to be powdery, and to fall away on exposure to the air [*syn.* **galería** (2)], it is then known as **v. dulce**—it sometimes has a rhombohedral structure; **v. acampanilada**, **v. rubiada** or **rubio avenado** is so called because it partakes of the nature of **campanil** or **rubio** respectively (J. D. Kendall); *see* **capa** (1); (3) diverse quality or colour of earth or stones; (4) streak, stripe or vein of a certain colour in stone or wood, *see* **veta** (5); (5) channel by which water circulates below ground; (6) mineral water found underground, *see* **venero**; (7) Fr.

Guiana, alluv. m. richest part of the pay-dirt [*cinta* (3)], seldom extending more than 2 or 3 m. (L. Levat).

**VENAJE**, quantity of water in a river, *see* **caudal**.

**VENDEJA**, public sale, *see* **subasta**.

**VENDUTA**, Span. Am. auction, *see* **subasta**.

**VENDUTERO**, auctioneer, *see* **subastador**.

**VENERA**, *see* **venero** (1) and (2).

**VENERILLO**, Tipuani, Bol. pay-gravel (M. Frochet), *see* **cinta** (3), *comp.* **venero** (3).

**VENERO**, (1) spring of water, *syn.* **venera** (1), *see* **manantial** ; salt-water source ; (2) vein of metal, *syn.* **venera** (2), *see* **veta** (1) ; (3) Arg. deep lead or deep-seated deposit covered by more or less considerable masses of barren material distinct from the auriferous stratum (V. Novarese), *see* **placer**, *comp.* **aventadero** (3), **venerillo** ; (4) bed or seam, *see* **capa** (1), *e.g.*, **veneros**, Bol. bands of auriferous conglomerate (C. Malsch) (5) Bol. stream-tin deposit, *see* **estaño** (2) ; (6) Sandia, Peru, alluv. m. pay-dirt of recent placers [**aventaderos** (3)], *see* **cinta** (3) ; (7) any mineral deposit (Acad.), *see* **criadero** (1).

**VENIDA**, overflow of rivers, *see* **crecida**.

**VENIDO**, Mex. fall of earth, stones, etc., from a hill, *comp.* **derrumbe** (2).

**VENILLA**, **VENITA**, small vein or stringer, *comp.* **vena** (1), **veta** (1).

**VENTA**, sale ; **v. en subasta**, sale by auction, *see* **subasta**.

**VENTALLA**, fan, *see* **abanico** (3), **ventilador**.

**VENTANA**, (1) window ; (2) window-shutter.

**VENTANILLA** (small window), (1) Mex. plat or station (S. Ramirez), *see* **cóncavo** ; (2) hoist. opening in the door [**compuerta** (1)] of an ore-shoot, sliding-gate, etc., for the rope to pass through, *see* Fig. 30, *u.* **compuerta** (3) ; (3) Peru, natural opening in rocks (Humboldt), *comp.* **hendedura**.

**VENTANILLERO**, Mex. an underground station-tender (Dwight).

**VENTILACIÓN**, ventilation ; **v. artificial**, artificial ventilation ; **v. circular**, ventilation by two shafts sunk close together ; **v. diagonal**, ventilation by two shafts situated at either end of a field of exploitation ; **v. natural**, natural ventilation.

**VENTILADOR**, ventilator, usually some kind of fan, *see* **abanico** (3) ; for parts of, *see* **canalizo**, **envolvente**, **oído** (2), **paleta** (2) ; **v. aspirante**, exhaust ventilator ; **v. impelente** or **soplante**, blowing ventilator ; **v. de Harz**, Hartz mine-pump or blower (Ger. **harzer Wettersatz**), *syn.* **máquina de campana** (10).

**VENTILAR**, to ventilate ; **v. una mina**, to ventilate a mine.

**VENTURINA**, aventurine quartz (**cuarzo**).

**VERA**, Span. Am. tree of very hard wood (**madera**) similar to *ligum-vitæ* (**guayacán**).

**VERANEADOR**, Ant. Col. alluvial miner or gold-washer who works in the dry season (**verano**) only, generally from the middle of December to the end of March, and in June, July and August—the latter season or “little summer” (**veranillo**) is, however, very uncertain.

**VERANEO**, Ant. Col. the working of alluvial mines in the dry season (*verano*).

**VERANILLO**, *see u. veraneador*.

**VERANO**, summer, *syn. estío* ; S. Am. dry season ; **mina de v.**, Ant. Col. alluvium situated on the margin of large rivers, and which can only be worked in the dry season, as in the wet season or "winter" (*invierno*) it is frequently covered by the floods (*avenidas* or *crecientes*), *comp. u. invierno*.

**VERDE**, adj. green ; **cobre v.**, malachite, *see cobre* (2) ; **metal v.**, Mex. an argentiferous ore with copper, in the state of carbonate, oxide or sulphide, as an essential part of its composition ; for **plata v.**, *see u. plata* (2).

**VERDE**, verdigris ; **v. hidrofano**, **v. silicatado**, **v. terroso** are var. of copper ores.

**VERDEMAR**, *see u. berilo*.

**VERDETE** (verditer or copper acetate), gold-mill. verdigris (on copper plates)—according to Professor Henry Louis, "hydrated oxide of copper with sometimes some carbonate ; probably when water containing sulphates is used, a basic sulphate may also form," *syn. cardenillo* (1).

**VERDIONES**, Chile, green stains indicative of the presence of copper ore, *see cobre* (2).

**VERDUGADA**, *see u. verdugo*.

**VERDUGO**, row of bricks in a wall, *syn. verdugada* ; **verdugadas** (or **hiladas**) **de ladrillos**, rows of bricks in masonry, placed certain distances apart, in order to increase the bond (**trabazón**) of the work.

**VEREDA**, path, footpath, *see senda* ; Peru, sidewalk (*Velázquez*).

**VERIFICADOR**, (1) bor. verifying tool (Fr. *vérificateur*) ; (2) **verificador-explosor**, a telephone applied for testing the quality of explosives (*Molina*).

**VERTEDERA**, Somorrostro, Sp. inclined shoot (*Molina*), *syn. manga* (7), *see paso* (2).

**VERTEDERO**, (1) overflow waterway of a dam [**presa** (1)] etc., *see rebosadero* (1) ; (2) c.m. scoop (*Molina*) ; (3) S. Am. spring ; source, rivulet (*Lucas*), *see manantial*.

**VERTIENTE**, pr. p. of *verter*, *see u. agua* (1).

**VERTIENTE**, (1) waterfall, *see salto* (3) ; (2) spring, source, *see manantial* ; **vertientes de agua salada**, Arg. brine springs ; (3) watershed or divide, *see vaguada* ; (4) waste weir of a dam (*Ponce de León*), *see rebosadero* (1) ; (5) vent. air-drift (*Ponce de León*), *see u. galería* (1).

**VESPERTINAS**, *see u. legítimas*.

**VESTIDO**, dress ; **v. de minero**, miner's dress, *see boina*, *cachucha*, *cotense* (3), *delantal*, *frisada*, *gorra* (1), *jerga*, *mecapal* (1), *para*, *patío*, *pechera*, *serape*, *silla* (2).

**VESTIGIO**, assay. trace (of gold or silver), *see huella* (1), *humores*.

**VETA**, (1) vein or lode, equiv. Port. *veia*, *vieiro*, Fr. *filon*, Ger.



**Gang, Erzgang**, *see* canal (14), cantera (3), fibra (2), fibrazón, filón (1), guía (5), hebra (2), macho (4), mena (1), ramal (3), vena (1). **NOTE.**—The Spaniards use the term **filón** for the large and more important veins, those of less consequence being called **veta**, **vena**, and their diminutives. In Mexico, and in Spanish America generally, **veta** = lode. In Colombia lodes are generally termed **hilos** (threads), **agujas** (needles) being leaders, branches or small veins. **Mina de v.**, a vein mine, as distinguished from an alluvial mine (**mina de aluvión**); **v. caldeada al respaldo**, vein "frozen" (lit. welded) to the walls; **v. de cajón** (10), inclined lode (in Col. = vertical lode or one inclined from 45° to 90°); **v. de cuarzo**, cross-spur; **v. de resbalón**, vertical lode; **v. de sombra**, vein inclined from 20° to 60°; **v. dislocadora**, dislocator; **v. de manta** (3), *see* manta (3); **v. en cuña**, gash vein; **veta-filón**, fissure vein; **v. madre**, main lode; **v. manteada**, horizontal vein, *see* u. **remolino** (2); **v. rechazada**, dislocated vein; **v. sin crestones**, "blind" lode; **v. transversal**, cross-vein or lode; *see* **ahogada** (1), u. **borra** (3), **clavada** (2), u. **corrido**, da, **crucero** (2), u. **echado**, da, u. **frutos** (2), **hoyada** [u. **trabajo** (2)], **legítimas**, **manto** (3), u. **oblicuo**, **cua**, u. **recostado**, da, u. **robado**, da, u. **seco**, ca, u. **serpenteado**, da, u. **socio**, ia, **sol** (1), **tambor** (3), u. **tope** (6), u. **transversal**. (2) Bed or seam, *see* **capa** (1), e.g., sometimes applied to a seam of coal; **vetas**, Almaden, Sp. the cinnabar-bearing quartzite beds and grit, *see* **mercurio** (2); (3) rib of ore in a vein or lode (S. Ramirez), leader, pay-streak, *see* **cinta** (2); (4) mineral waters found underground, *see* **manantial**; (5) vein in wood or marble, grain, *see* **vena** (4); (6) Peru, mountain sickness, *see* **soroche** (1).

**VETADORA**, *see* u. **batea**.

**VETARRÓN**, big lode, *see* **veta** (1).

**VETICA, VETICILLA**, small vein, *see* u. **fibra** (2), **filón** (2), **veta** (1).

**VETILLA**, (1) small vein or leader, *see* **nervadura**, **veta** (1); (2) Mex. slide (Dwight), *see* u. **salto** (1); (3) **vetillas**, Mex. grooves in slickenside (Dwight), *see* **plano** (4).

**VÍA**, (1) way, road, route, *see* **camino** (1); rail. line, track, *syn.* Span. Am. **carrilera**; **v. férrea**, **camino de hierro** or **ferrocarril**, railway, railroad; **v. mixta**, ordinary road with geared portions for ascending slopes; **v. muerta**, rail. siding (closed at one end); **v. principal**, main road or line; (2) underground road, gallery or shaft; **v. de comunicación**, shaft [**pozo** (2)] or gallery [**galería** (1)]; **vías de transporte diagonal** = Fr. **voies thiernes**; **vías generales**, main roads or galleries; **vías secundarias**, secondary roads or galleries; (3) aerial ropeway, cableway or wire-rope tramway; **v. de alambre suspendido**, wire ropeway, *syn.* **andarivel**, **cable aéreo**, **cable-vía aéreo** (Dwight), **ferrocarril aéreo**, **transporte aéreo**, equiv. Fr. **câble aérien**, **câble porteur aérien**, **plan aérien**, **transport aérien**, **zéonifère**, Ger. **Drahlseilbahn**; (4) **v. vertical**, guides for a skip or cage, *see* **guiaderas**; (5) **v. de escape**, overflow waterway of a dam, etc., *see* **rebosadero** (1);

(6) chem. way, method, *v. húmeda*, wet way ; *v. seca*, dry way ; met. process, *syn. método* (2), *procedimiento* ; *sistema por v. seca* or *de fundición*, smelting process, *see fundición* (2) ; (7) transp. rail, *see carril* (3).

**VIAJE**, Zac. and Pachuca, Mex. timb. an oblique face in transverse timber, *see* Fig. 76, the *boca* (5) abuts against the hanging-wall [*alto* (1)], while the *viajes* and *trompo* fit into a hitch [*cárcel* (2)] on the foot-wall (*Carrión*). NOTE.—From *esviaje*, a term used in arch.



FIG. 76.—Viaje (after Luis Carrión).

*a a*, viajes ; *b*, trompo ;  
*c* boca (5).

**VIEIRO**, Port. vein, *see veta* (1).

**VIENTO**, wind or current of air.

**VIENTRE**, met. the widest part or "belly" of a blast-furnace [*horno* (2) *alto*].

**VIGA**, beam, *syn. obs. cabrial*, *madero* (1), *trabe*, *see cuartón* (1), *cumbrera*, *durmiente* (4), *guía* (18), *jácena*, *lata* (3) ; girder (may be of wood, iron or steel, and simple or compound) ; balk (or large squared timber) ; joist (horizontal timber supporting floor or ceiling), *see can* (1), *carrera* (4), *cuartón* (1), *tirante* (1) ; rafter (sloping timber of a roof extending from the eaves to the ridge), *see cabrió* or *cabriól*, *costanera* (2), *costilla* (2), *crucero* (5), *marrano* (3) ; *v. apuntalada*, *armada*, *embragada* or *reforzada*, truss beam or girder ; *v. de celosía*, lattice beam or girder ; *v. de piezas*, compound or built beam or girder (Ponce de León) ; Mex. timb. the *viga* as used underground is 6 m. long, by 20 cm. by 20 cm., *comp. gualdra*, *gualdrilla*, *tirante* (5), *vigueta* ; *v. doble* or *tirante* (5), Mex. large beam ; for small beam, *see alfarda* ; span beam [*espeque* (1)] of a horse-whim or *malacate* (1) ; *v. de aire*, long horizontal beam of a horse-whim above the drum.

**VIGÍA**, watchman, *see velador*.

**VIGILANTE**, watchman, guard, *see velador*.

**VIGUETA** (Port. *vigota*), small beam ; Mex. as used underground is 6 m. long  $\times$  10 cm.  $\times$  7 cm., *comp. gualdra*, *gualdrilla*, *u. viga*, *tirante* (5).

**VINTEM**, Braz. one thirty-second part of an *oitava*.

**VIRADA DE RIO**, Braz. alluv. m. a sort of dike [*dique* (1)] or dam of trunks of trees, branches, stones and earth, with a channel open on one side (*Calogeras*), *comp. chamburgo*.

**VIRGEN** (Port. *virgem*), adj. *virgen* or *native* ; *plata v.*, native silver.

**VISTA**, sight ; *mineral á la v.*, ore in sight.

**VITREO**, *REA*, adj. vitreous, glassy, *see u. feldespato* and *plata* (2).

**VITRIOFIDO**, vitrophyre ; in S. L. Potosí, Mex. dikes and small masses of this rock are invariably met with in the neighbourhood of tin-deposits, hence it becomes a useful guide to the discovery of the latter, *see u. estaño* (2), *indicaciones*.

**VITRIOLO**, vitriol ; *v. azul*, blue vitriol or copper sulphate, *syn. piedra azul* (c), *piedra lipis* ; *v. blanco*, white vitriol or zinc sulphate ; *v.*

verde or de marto, copperas or green vitriol = ferrous sulphate, *see* caparrosa (2), *comp.* caparrosa (1).

VIUDO, DA, adj. *see u.* barra (5).

VIVO, VA, adj. alive, kindled; cal viva, quicklime; explosivos vivos, explosives which burn with great rapidity, *comp. u.* lento, ta; piedra viva, very hard stone.

VIZCAÍNO, NA, adj. pertaining to Vizcaya, *see u.* barra (1).

VOLADERA, float or pellet of a water-wheel, *see* paleta (3).

VOLADORA, (1) fly-wheel of a steam-engine, *see* volante (1); (2) Peru, upper millstone (Dwight), *see* muela (1); (3) Mex. grinding-stone or muller of an arrastre (3), *syn.* caballo (10), Mex. metapil (1), muela (2), piedra de mano, Mex. and S. Am. mano (3), *comp.* volandera (1). The lower surface in contact with the bottom of the arrastre (3) is known as the asiento (5); on the upper surface, near the edge, holes are made, and wooden pegs [estacas (8)] fixed to which ropes or lias are attached. (4) Rocket, *see* cohete (4).

VOLADURA, a large blast, *syn.* v. de mina, *see u.* hornillo (3), tiro (6).

VOLANDERA, (1) runner of a Chilian or edge-mill, *syn.* muela (3) vertical, Chile, volante (2) de piedra (edge-runner of a trapiche); (2) upper millstone, *see* muela (1); (3) mech. washer, *see* empaquetadura (2).

VOLANTE, pr. p. of volar; bomba v., pump. suspended drawing-lift, *see u.* bomba (1); rueda v., fly-wheel, *see* volante (1); tablero v., cradle, *see* tablero (3).

VOLANTE, (1) fly-wheel (Fr. volant), *syn.* rueda volante, voladora (1); (2) v. de piedra, Chile, edge-runner, *see* volandera (1); (3) mech. balance-beam, *see* balancín; (4) v. de bomba, pump. pump-bob, *see* contrabalanzón; (5) Asturias, Sp. timberman, *see* palero (4).

VOLAR, to blast rocks or mines. NOTE.—Generally used for large blasts, *comp.* tirar (2).

VOLCADOR, transp. a revolving tippler, *comp.* basculador.

VOLCÁN, (1) volcano; v. apagado or extinto, extinct volcano; (2) Ant. Col. land-slide, *see* derrumbe (2).

VOLQUETE, transp. tipping-wagon, *syn.* vuelque, *see u.* vagón, volteo.

VOLTAJE, el. voltage.

VOLTEAR (to overturn), v. la torta, Mex. spading, turning the torta, *see* trasparar.

VOLTÍMETRO, el. voltmetre.

VOLTIO, el. volt (Acad.).

VOLUMÓGENOS (Fr. volumogènes—Murgue), vent. machines which, by their movement, generate a well-defined geometric volume, and, becoming filled with air from the mine, and all communication with the latter being afterwards closed, throw out into the surrounding atmosphere all the air taken from the mine (Molina), *e.g.*, Hartz ventilator, Fabry, Roots, Lemeille, *comp.* deprimógenos.

VOLVEDOR, (1) screw-driver, turnscrew, *see* destornillador; (2)



Torre vieja salt-works, Alicante, Sp. the workman who breaks up the precipitated salt with the *paleta* (4), *comp. tirador*.

**VÓMITO**, Ant. Col. outcrop, *see crestón*.

**VÓRTICE**, whirlpool, *see remolino* (1).

**VUELQUE**, *see volquete*.

**VUELTA**, (1) mech. rotation, stroke ; (2) bend, turn of a road, gallery, etc. ; (3) *dar v. la plata*, Mex. said when all the impurities have been removed from the silver in the refining process (Gamboa) ; brightening of the silver in cupellation, *see relámpago*.

**XACAL**, *see jacal*.

**XIHUITL**, Mex. turquoise (*turquesas*) found by the Aztecs in the Cerro Xicohtzonc, close to Atzacapetzalco, near the city of Mexico (S. Ramirez).

**XILÓPALO**, wood opal, *see u. ópalo*.

**YACENTE**, lying-wall, footwall or floor of a vein or ore deposit, *see bajo* (3).

**YACER** (to lie), *modo de y.*, mode of occurrence, *see yacimiento* (2).

**YACIMIENTO**, (1) mineral deposit, *see criadero* (1) ; (2) occurrence or mode of occurrence (Fr. *gisement*). NOTE.—“ Esta palabra, además de la idea de criadero, represente más concretamente la de su manera de ser, ó del modo como se presenta en la naturaleza ” (F. Gillman).

**YANTA**, tire of a wheel, *see llanta*.

**YARETA**, Bol. Peru and Chile, a resinous moss, met with only at considerable elevations and used as fuel (J. B. Minchin). “ *Yareta (Bolax globaria)* is a highly resinous plant, firm and compact, found distributed over the top and sides of the mountains, cropping out from under the boulders, and spreading into large mounds as much as 20 feet across ” (B. Hunt). These mounds are broken up by chisel-headed bars, and the pieces are left to dry for three or four months. The cost in 1899 was 35s. per ton delivered at the amalgamation works. Other fuels used in Peru are turf (20s. per ton), petroleum shale (£4 10s. per ton), and *taquia* (6s. 6d. per ton) (A. L. Pearse). *Comp. queñua, turba* (peat).

**YAREY**, Cuba, a species of guano (palm-tree), *see jaba*.

**YELMO**, Mex. coke-fork, *see trincho* (3).

**YERBA** (hierba—herb), flaw in the emerald (*esmeralda*), which tarnishes its lustre (Neuman and Barette), *comp. jardín*.

**YESAL, YESAR**, gypsum-pit, *syn. algezar* or *aljezar*.

**YESERA, YESERÍA**, gypsum-kiln.

**YESERO**, preparer or seller of gypsum.

**YESO**, (1) gypsum mineral, *syn. algez, aljez* or *aljør* ; *piedra de y.*, gypsum-rock ; *y. especular*, selenite, *syn. espejuelo* (3) ; (2) calcined gypsum ; *y. blanco*, whiting ; *y. mate*, plaster of Paris.

**YESOSO, SA**, adj. gypseous.

**YESOSOS**, Asientos, Aguascalientes, Mex. copper ores in which calcite or fluor spar predominates as the matrix, *comp. duros, lamosos* (1), *pastosos*.

**YODO**, iodine—it occurs in the salt of salt springs.

**YUNQUE**, (1) anvil, *syn.* **ayunque**, **bigornia** (Port. **bigorna**, Fr. **bigorne** = beaked anvil). For different kinds of anvils, *see* **bigorneta**, **coche** (4), **cochina** (2), **macho** (1), **tajadero**. For parts of anvil, *see u.* **cara** (1), **cepo** (5), **pico** (5). (2) **Metal de y.** (or **llunque**), Mex. smalls from the cleaners, *syn.* **tierras de y.**, *see u.* **tierra** (4).

**YUNTA**, couple, pair, yoke ; **y. de bueyes**, yoke of oxen.

**ZABULLIR**, *see* **zambullir**.

**ZACA**, Almaden and Linares, Sp. bag of hide (like a large wine-bag or **zaque**), formerly used for draining mines (Molina), *comp.* **bota**, *see* **saco** (1).

**ZACATE**, Mex. and Phil. (1) meadow or mountain-grass, herbage ; (2) hay, forage. NOTE.—Sometimes spelt **sacate**.

**ZAFARECHE**, Ar. Sp. pond or reservoir, *see* **estanque** (1).

**ZAFIR**, **ZAFIRO**, (1) sapphire, a var. of corundum (**corindón**) ; **z. blanco**, white, transparent, crystallised var. ; **z. oriental**, oriental sapphire, *see* **astería** (1) ; (2) ultramarine, lapis lazuli.

**ZAFIRITA**, blue chalcedony (Ponce de León), *see* **cuarzo**.

**ZAFRA**, (1) gangue, *see* **matriz** (1) ; (2) sterile rock or deads, *see* **desecho** (3), **zafretero**.

**ZAFRE**, zaffre or oxide of cobalt mixed with powdered quartz, etc.

**ZAFRERO**, workman occupied in the **trecheo** of waste rock [**zafra** (2)] (*Acad.*).

**ZAGALONES** (overgrown lads), Cartagena and Almagrera, Sp. ore-bearers from 19 to 20 years of age, *see* **gavia**.

**ZAHIÑO**, Ant. Col. timber ; useful for lagging shafts, etc.

**ZAMBULLIDOR, RA**, adj. *see u.* **batea**.

**ZAMBULLIDOR**, Ant. Col. alluv. m. workman who performs the operation known as **zambullir**.

**ZAMBULLIR**, **ZABULLIR** (to plunge or put under water), Ant. Col. alluv. m. to extract gold from the bottom of rivers and streams by means of the **batea zambullidora**, *see u.* **trincho** (2).

**ZANGARRO**, Asientos, Aguascalientes, Mex. small mill or hacienda, *see* **molino** (1).

**ZANJA**, (1) trench or cutting (generally made in exploring for lodes, etc.), *syn.* Ant. Col. **brecha** (3), **calicata** (2), Col. **catacorte** (1) or **chamba**, **cuneta** (1) (if small), **hornacho**, **trancada** (1), **trinchera** (1), equiv. Port. **rêgo** (1), Fr. **tranchée de recherche**, Ger. **Schurfgraben**, *see* **fosa** (1), *comp.* **acequia**, **brecha** (5), **catacorte** (2), *u.* **cortar** (5), **cuneta** (2), **trincho** (1) ; (2) pit dug in the ground, *see* **hoyo** (1) ; (3) **abrir las zanjas**, to commence a building ; (4) **labor de zanjas**, underhand stoping, *see* **rebajo** (2) ; (5) Span. Am. channel of a rivulet (**arroyo**), *see* **arroyada** (2).

**ZANJEO**, *see u.* **rebajo** (2).

**ZAPA**, Ant. Col. intermediate level driven between two main galleries [guías (9)] *syn.* *entrepiso* (1), Mex. *entresuelo*, Sp. *galería* (1) *intermedia*, Asturias, Sp. *guía* (10), Palencia, Sp. *sobreguía*, equiv. Ger. *Mittelstollen*, *Theilungstrecke* or *Halbe Gegenstrecke*. **NOTE**.—In the Remedios district, Antioquia, Col. *zapas* are driven along lodes that dip about 30°; the lower *zapa* will be driven a few metres above the roof of the main level, in order to leave an arch or pillar of ground [*contrafuerte* (2)] to support the latter, while a higher intermediate level (*z. alta*) may be driven a few metres below the floor of the upper main level for a similar purpose, *see* Fig. 33. The pillars are usually stoped down before the main levels are abandoned.

**ZAPAPICO**, pickaxe or mattock, *syn.* *azadón* (4) *de peto* or *de pico*, *pico* (1), *piqueta* (1), Mex. *talacha* or *talbacho*, equiv. Port. *enxada*, *picadeira*, *see* *espiocha*, *piquetilla*.

**ZAPATA**, timb. head-piece, *see* *galápago* (2).

**ZAPATERA**, *see* *zapatero* (2).

**ZAPATERO**, (1) Venez. purple-heart, used in mining (G. P. Ashmore and C. Seale), *see* *madera*; (2) *zapateros* or *zapateras*, name given in some localities to the holes [*barrenos* (1)] drilled along the bottom of the face of a large gallery or tunnel (Molina).

**ZAPATILLA** (little shoe), *z. de hierro*, iron shoe of a wooden stamp, *see* *zapato* (1).

**ZAPATO** (shoe). (1) mech. prep. shoe (Austral. head) or stamp (*calzadura*), *syn.* *solera* (10), equiv. Fr. *sabot* (*en fer*), Ger. *Pochschule*, *see* *zapatilla*; (2) *z. de freno* (2), brake-shoe.

**ZAPOTE**, *see* *nispera*.

**ZAQUE**, *see u. zaco*.

**ZARANDA**, (1) mech. prep. screen, *see* *criba*; (2) *z. de mano*, hand-screen for sifting earth or sand; assay. small sieve, *see* *cedazo* (1); (2) mech. prep. grizzly (Dwight), *see* *parrilla* (2).

**ZARANDADOR**, *see* *zarandero*.

**ZARANDAR**, **ZARANDEAR**, to screen, *see* *cribar*.

**ZARANDERO**, workman who uses a *zaranda* (1), or who is in charge of it, *syn.* *zarandador*.

**ZAROCHE**, Ecuador, mountain-sickness, *see* *soroche* (1).

**ZARZO** (hurdle), (1) Tolima, Col. timber lining above the cap-piece, *see* *revestimiento* (1); (2) Ant. Col. cross-timbers [*travesaños* (1)] on stull-pieces [*tacos* (6)] to sustain the walls (*respaldos*). The *escombros* (2) or *ripios* (5) are packed on these (Uribe), *syn.* *empalado*, *enmaderado* (2), *see* *camada* (3); (3) *see u. chimenea* (4).

**ZEFRE**, safety-fuse, *see* *mecha* (2).

**ZIGUEÑA**, *see* *cigueña*.

**ZINC**, **ZINQUE**, zinc, *see* *cinc*.

**ZIQUITUMBA**, Ant. Col. the unwatering of a mine by hand labour, the men carrying the water from one shaft or winze to another (Uribe), *see* *desagüe* (2), *comp.* *trecheo*.



**ZÓCALO**, arch. socle or zoele ; **z. de fundición**, in blast-furnaces, the circular cast-iron foundation-plate, strengthened with flanges, etc.

**ZONA**, (1) layer or band of mineral in a vein, *see* **cinta** (2) ; (2) geol. zone, belt or band of rock, limited horizontally or vertically, and characterised by certain minerals, fossils, etc., *syn.* **banda** (5), **faja** (2) ; (3) **z. de calcinación** or **de preparación**, **de reducción**, **de fusión**, in blast-furnaces, calcination or preparation, reduction and fusion zone respectively.

**ZONCHO**, Port. piston of a pump, *see* **émbolo** (1).

**ZOQUETE**, (1) block, a short piece of timber, *see* **u. calzar** (5) ; (2) a short thick stick, used in bending or twisting ropes (Velázquez).

**ZORRA** (fox), Mex. the lad who formerly attended the chief miner underground and carried the torch (G. F. Lyon), *syn.* **morrongo**, **zorrilla** (1), *comp.* **abajador**, **pepe**.

**ZORRILLA**, (1) *see* **zorra** ; (2) *see* **plataforma** (5).

**ZOTLANQUE**, *see* **sotlanque**.

**ZUA**, **ZUDA**, *see* **azuda**.

**ZUFRE**, *see* **azufre**.

**ZULAQUE**, bitumen [**betún** (1)] artificially made into a paste with tow, lime, oil and ashes or ground glass, for stopping leaks in flumes, etc.

**ZUNCHO**, band, hoop, collar, ferrule ; hoop-iron strengthening beams, vats, etc.

**ZURDO**, **DA.** adj. left-handed, *see* **u. tornillo** (1).

**ZURDO**, a shaft [**pozo** (2)] sunk opposite the dipping side of a vein.

**ZURRÓN** (bag), Mex. raw-hide ore-sack, holding about 150 lb.—a load for a **tenatero** (Dwight), *see* **saco** (1).

**ZURRONERO**, (1) Mex. the **peon** who carries ore or waste rock in **zurrones** ; (2) maker of **zurrones**.

SUPPLEMENT





## SUPPLEMENT

- ABERTURA**, (5) *aberturas de trabajo*, met. arches or large spaces round a blast-furnace for gaining access to the twyers, etc.
- ACAMPANAR**, (2) *acampanarse el horno*, met. to form an arch (of the charge of a blast-furnace), whereby a hollow space is left underneath, which is liable to lead to sudden falls, *comp. lobo* (2) (suppl.), *pegadura* (4).
- ACENDRADA**, Peru, met. whitish marl [*marga* (1)] used in making cupelling-furnaces.
- ACERADO**, (7) Mex. cerargyrite or horn silver (*plata gris*) (Hermosa).
- ACLARAR**, met. to clear a twyer by passing a pointed bar through the blast-pipe (*busa*—*see* supplement).
- ACULAR EN ESTÉRIL**, to end (of a gallery) in dead rock (R. B. Johnston), equiv. Port. *terminar*.
- ACUÑADO**, mine-dam (Ezquerria), *see cerramiento*.
- ADEMADORA**, Mex. timb. a long and somewhat curved axe [*hacha* (1)] with a gouge at one end (Hermosa).
- ADOBE**. This name is also given to briquettes (*aglomerados*), bricks of turf, etc.
- AFLORAMENTO**, Port. outcrop, *see afloramiento*.
- AGUA**, (1) *aguas colgados*, water accumulated in old workings (Ezquerria).
- AGUADOR**, (4) mech. prep. the man who looks after the water-supply of a mill, etc.
- AGUJERO**, (6) *see canillero* (suppl.); (7) *a. de tobera*, met. twyer-opening.
- AGUJILLA**, Hualgáyoc, Peru, stromeyerite [ $\text{Ag}_2\text{S} + \text{Cu}_2\text{S}$ ], called *agujilla* from its radiated or fibrous structure (Santolalla), *see cochizo* (1) (suppl.).
- AHOGAR**, (3) *a. las piedras*, Huacho, Peru, a method of increasing the weight of blocks of salt by putting them in water saturated with salt, and leaving them therein for another season (*estación*) (Raimondi), *comp. curar* (2) (suppl.).
- ALCAHUETE**, *see u. rubiales* (suppl.).
- ALTURA** (height), rise of an arch (Ezquerria), *see sagita*.
- ALUMBRAMIENTO**, *a. de aguas*, discovery of waters. *see iluminar*.

- ALZA**, (4) Bol. separating gold from sands in a *lavadero* (4).
- ALZADO**, elevation of a building, etc.
- AMASADO**, met. kneading of refractory earth, clay, etc., followed by the *batido* (suppl.); kneading of peat (*turba*), coal, etc.
- AMASADOR**, kneading-machine for working clay, etc., into paste.
- AMPLITUD**, span of an arch (*Ezquerria*), *syn.* *anchura*, *see* *luz* (4).
- APRESTADOR**, Vizcaya (Prov.), Sp. man who prepares the ore, etc., in the Catalan forge process (*Barinaga*).
- APURAÇÃO**, Port. (1) refining (of metals, etc.), *see* *afinación*; (2) Braz. gold-washing, *see* *lavadura*.
- ARCO**, according to *Ezquerria*, a vault (*bóveda*) of small length compared with its width or span; where the length is considerable = *cañón de bóveda*; a. *adintelado*, flat arch; a. *de bóveda*, arch-vault; a. *escarzano*, arch less than a semicircle; a. *en esviaje*, oblique or skew arch; a. *en rampa*, rampant arch, *see* *rampa* (2).
- ARMAR**, (3) a. *una gávia*, Sp. to put men in line for a *gávia* (*q.v.*).
- ARQUETAS**, Almaden, Sp. the two walled spaces of a *Bustamante* furnace, each of which has six flues, in connection with a similar number of lines of *aludeles* (*Barinaga*).
- ARRANCAR**, (3) a. *un horno*, in lead-smelting, to light up the furnace — corresponds to “blow in” of a blast-furnace.
- ASTIAES**, Port. sides or walls of a vein, *see* *hastial* (1).
- ATACADOR**, (2) a. *de madera*, met. wooden stopper, used with a piece of clay at one end, for closing the tap-hole of a furnace.
- ATERRAMIENTO**, met. extinguishing incandescent coke by means of coal-dust, etc.
- ATIZADERO**, *see* *puerta* (1) (suppl.).
- ATIZAR**, met. to feed with fuel, *comp.* *cebar* (2).
- ATRAVESADO**, (3) a vein crossed by another (*Ezquerria*), *see* *u. cruzado*, *da*.
- AVANÇO**, Port. main level, following the strike (*R. B. Johnston*), *see* *u. galería* (1).
- AZUFRAO**, (3) *Hualgáyoc*, Peru, yellow ore from the decomposition of galena (*Raimondi*); (4) Chile, nitrate of soda, or *caliche* (1), of a canary-yellow or lemon colour (*E. Kaempfer*), *comp.* *obispo* (suppl.).
- BANCO**, (1) b. *de monda*, mech. prep. bench on which ore is broken up and sorted; (11) Chile, a second bed of *caliche* (1), found in some *salitrales*, below the *cova*, and lying on the bed-rock (*E. Kaempfer*).
- BANQUETA**, (3) mech. prep. stool or seat for ore-sorters.
- BARDALILLO**, met. bridge of a reverberatory furnace (*Sánchez*), *see* *u. puente* (2).
- BARRA**, (11) *see* *u. plata* (2) (suppl.).
- BARRO**, (5) *barros*, Cartagena, Sp. mech. prep. fine grains [*arenas* (2)], powder and slime, from less than 1 mm. to impalpable powder (*Moncada*).

- BATIDO**, met. beating of refractory earth, etc., *see* **amasado** (suppl.).
- BATIR**, (3) = **berlingar**, *see* **berlingado**; (4) **b. las cabezas**, Almaden, Sp. to beat, with rollers, the condensed fumes of a Bustamante (**aludel**) furnace (**Barinaga**).
- BERGAMAZO**, Vizcaya (Prov.), Sp. small wall, lining the principal wall of a Catalan forge (**Barinaga**), equiv. Fr. **piech d'el foc** (Ariège).
- BLANDEO**, Linares, Sp. in **boliche** (5) lead-smelting, the sweating or roasting stage, *comp. u.* **caldeo**, **corrida** (3), **resubida** (suppl.).
- BOLA**, (7) **horno de bolas**, met. puddling-furnace, *syn.* **horno de pudlado**.
- BOQUINETE**, *see* **busa** (suppl.).
- BRASA**, Almaden, Sp. second period of distillation in the Bustamante (**aludel**) furnace; it is preceded by the **fuego** (when fuel is used), and followed by the **enfrio** (**Barinaga**).
- BROCA**, Port. (1) carp. drill or auger, *see* **barrena** (1); (2) blast. drill or borer, *see* **barrena** (2); **b. trancada**, drill "hung-up," *see* **ahorcada**.
- BRONZUDOS**, Mex. pyritic ores, *see* **bronce** (3).
- BROQUEIRO**, Braz. miner, borer or driller (P. Ferrand), *see* **barretero**.
- BUITRÓN**, (5) *see* **puerta** (1) (suppl.).
- BURACO**, (2) **b. chulano**, Braz. drill-hole, inclined upwards; **b. de agua**, ditto, inclined downwards (P. Ferrand), *see* **furo** (1) (suppl.).
- BUSA** (Fr. **buse**), met. blast-pipe connecting blast-main (**portaviento**) with twyer (**tobera**) (Ibran), *syn.* **boquinete**.
- BUSITA** (Fr. **busillon**), met. nozzle at the end of the **busa** (Ibran).
- CABEÇA DO FILÃO**, Port. visible outcrop (R. B. Johnston), *see* **crestón**.
- CACO**, (2) Braz. plate, of copper, 0.15 to 0.30 m. in diameter, filled with juice of plants, for catching very fine gold, *see* **jurubeba** (suppl.).
- CADENA**, (1) **c. chata**, a chain made of round and flat links, alternately; **c. de chapas**, a chain made of flat links; (5) **cadena**! Sierra Almagrera, Sp. call of the **capataz**, repeated by the miners, when the dinner-hour begins—a relic of the days when criminals worked in mines (Ezquerria), *comp. otra* (suppl.), **tabaco** (suppl.); (11) **c. de cangilones**, mech. prep. bucket-elevator.
- CADINHO**, (2) Braz. small blast-furnace used for smelting iron ores (P. Ferrand).
- CAES** (wharf), Port. plat (R. B. Johnston), *syn.* **desanche**, *see* **cóncavo**.
- CAIXA DE CRIAÇÃO**, Port. country-rock (R. B. Johnston) (**roca** (4)).
- CAJA**, (11) *syn.* **c. de agua**; (21) **c. de tumba** (2), German buddle (Ger. **Schlammgraben**), *see* **cajón** (5); (27) **cajas piramidales**, mech. prep. pointed boxes (Ger. **Spitzkasten**), *syn.* **cajas puntiagudas**, *see* **cajón** (4); **cajas piramidales de corrientes ascensionales** = Ger. **Spitzluten**; (28) vent. chamber of a ventilator, fan or blower, *see u.* **capacidad** (suppl.).
- CALCINACIÓN**, *see note u.* **tostión** (suppl.).



- CALDEIRA**, c. do poço, Port. bottom of a shaft (R. B. Johnston), *see* caldera (5).
- CALDEIRÕES**, Braz. (3) small shallow trenches formerly cut in the massive parts of the outcrops of quartz veins (Spix and Martius).
- CALDEO**, met. gradual drying of a furnace before smelting; Linares, Sp. in boliche (5) lead-smelting, the calcination stage, *comm.* blandeo, corrida (3), resubida (suppl.).
- CALDERO**, (4) Puertollano, Sp. met. reservoir or float, *see* reposador (2).
- CALENTADOR**, Rio Tinto, Sp. reverberatory furnace in which balls of calcined ore are dried before the derretido (Barinaga).
- CALZA**, (2) Peru, operation of putting steel on an iron borer.
- CÁMARA**, (5) cámaras de disolución, salt-mining, dissolution-chambers, equiv. Ger. Sinkwerk; (13) wheel-pit (Ezquerria) *see* cárcamo (3); (14) c. de ejercicios, experimental chamber for using rescue apparatus, equiv. Ger. Uebungsraum.
- CAMARETA**, part of the old boliche (5) furnace in which the lead fumes were condensed. In hornos mixtos, it is suppressed, independent condensing-chambers being used (Sánchez); camaretas, in the Bustamante (aludel) furnace, chambers at the head of the ramera (Barinaga).
- CAMPINA**, Port. plain, *see* llano, *comp.* planalto (suppl.).
- CANALIZO**, mech. prep. any narrow channel or gutter, for the passage of water, pulp, etc.
- CANDELERO**, (6) Mex. in the patio process, the iron tripod which carries the marquetas or bollos (1), and which rests in the vaso (6) (suppl.).
- CANDILÓN**, large open lamp (lámpara), usually flat and made of iron.
- CANÍARDELA**, met. an Archimedean blower, *see* soplante.
- CANILLERO**, met. tap-hole of a blast-furnace [horno (2) alto]; the channel connecting the crisol (2) of some furnaces with the reposadores (2), *syn.* agujero (6) de sangría, chío, *see* sangradero (2).
- CANÓN**, royalty; mine tax, *see* derecho (2). In Spain, the annual tax for iron ore, fuel, etc., is 4 pesetas per hectare, and for precious stones, metals and ores, other than those of iron, 10 pesetas per hectare.
- CAPACIDAD**, pump. valve-chamber (Moncada), *see* caja (4); vent. chamber or casing of a fan or (met.) blower, *syn.* caja (28); any chamber or room.
- CAPA-FILÓN**, bedded vein (Ezquerria), *see* capa (2).
- CAPILLA**, (2) hemispherical roof of a shaft-furnace (Sánchez), *see* copa (2), *comp.* u. cúpola.
- CAPORAL**, c. de mina, Peru, head foreman or boss, *syn.* cabo (3), mayoral.
- NOTE.—Ordinary foreman = mayordomo (2), *see* capataz (3).
- CAPULÍ**, Huamachuco (Prov.), Peru, wood used for timbering levels, etc.
- CARBONATO**, (2) carbonatos, Cartagena, Sp. mech. prep. seconds containing 55 per cent. of lead (Moncada); Linares, Sp. poor sulphides

containing from 45 to 50 per cent. of lead (Sánchez); elsewhere mixture of sulphates, silicates, and other oxidised ores of lead.

**CARBONERA**, (1) *c. alzada*, circular pile of firewood (Ger. *Meiler*), arranged more or less vertically; *c. echada*, ditto arranged horizontally; *c. alargada* or *prolongada*, rectangular or prismatic pile, with the firewood arranged transversely or longitudinally, *comp. u. fosa* (1) (suppl.).

**CARBONILLA**, (2) Chacas, Peru, lead soot or condensed fumes (E. L. Dueñas), *comp. hollín* (suppl.).

**CARGADERO**, (3) met. mouth or furnace top, *see* *tragante* (4).

**CARGADOR**, (4) Rio Tinto, Sp. man who loads the buckets at the bottom of a winch [*tornito* (1)] (Ezquerria); (5) Huamachuco (Prov.), Peru, timb. cap-piece (Santolalla), *see* *capa* (4).

**CARGADORA**, *see u. lavadero* (3) (suppl.).

**CARREIRO**, Port. (1) carter, *see* *carretero* (3); (2) Braz. trammer, *see* *carretero* (1).

**CARVOEIRA**, (1) Port. coal-pit, *see* *carbonera* (3); (2) Catta Preta, Minas Geraes, Braz. friable, rough-feeling greasy mass of greyish green colour, consisting of a very fine-grained quartz and a smoky grey talc with earthy grey manganese ore; it probably forms a layer, several feet thick, between the planes of separation of the quartzose mica-slate and the clay-slate below it; it generally contains a large quantity of gold (Spix and Martius), *comp. jacutinga*.

**CASCALHO**, *c. bravo*, Minas Geraes, Braz. bed of fine gravel, mixed with sand, covering gold-bearing *cascalho* (P. Ferrand).

**CASCO**, (2) helmet of a pneumataphore, *syn. yelmo*, *comp. careta*.

**CASCOTE**, Arnao, Sp. screened coal from 2·5 to 6 cm. in size (Moncada), *comp. grueso, menudo* (suppl.); *cascotín*, ditto from 1 to 2·5 cm.

**CAVADEIRA**, Braz. alluv. m. kind of iron chisel [*cincel* (1)] with a straight cutting edge, narrowing upwards, and with a long handle, used in digging gravel, etc. (P. Ferrand).

**CAVALLO**, Port. "horse" of lodes (R. B. Johnston), *syn. burro*, *see* *caballo* (5).

**CERNIDOS**, Cerro de Pasco, Peru, sifted ores which have passed a  $\frac{1}{2}$  or  $\frac{3}{4}$  inch screen (O. F. Pfordte), *comp. llampo* (1) (suppl.).

**CHAMINÉ**, Port. (1) chimney, *see* *chimenea* (1); (2) winze or staple (R. B. Johnston), *see* *clavada*.

**CHANCACA**, (2) Hualgáyoc, Peru, a mixture of *paco* and *pavonado* (tetrahedrite) (Raimondi), *comp. encajetado* (suppl.).

**CHAPEO** (hat), Port. gossan (R. B. Johnston), *see* *colorados*.

**CHICHARRÓN**, (2) Hualgáyoc, Peru, wad (Santolalla), *see* *acerdesa*; (3) *chicharrones*, Cerro de Pasco, Peru, a porous and scoriaceous var. of *cascajo* (4) [an altered grit or sandstone, according to Raimondi]; when the latter is compact = *pedernal* [*see u. pacos* (1)].

**CHINCHES**, Cartagena, Sp. mech. prep. ore which has passed through the *cilindros de remoler*, *syn. remolidos*.

- CHÍO**, *see* **canillero** (suppl.).
- CHIRRETE**, Cartagena, Sp. mech. prep. product of snails or **tierras** from old dumps, containing 6 per cent. of lead, *comp. u.* **grava** (suppl.).
- CHISCARRA**, calcareous rock, which readily breaks into small pieces.
- CHISPEADO**, (2) Yauli, Peru, tetrahedrite (**cobre gris**).
- CIARLECUE**, Vizcaya (Prov.), Sp. slag-dump (**vaciadero**) of Catalan forge (Barinaga).
- CIARZULO**, Vizcaya (Prov.), Sp. front side of Catalan forge (Barinaga), *syn.* **mano** (9) (Fr. main).
- CIELO**, (7) roof or hanging-wall of a mineral deposit, *see* **alta**.
- CINCHO**, (5) hoop of iron, etc., *see* **zuncho**.
- CINGLADO** (Fr. **cinglage**), met. shingling (Barinaga).
- CIRILLO**, Vizcaya (Prov.), Sp. bottom of Catalan forge (Barinaga).
- COBERTIZO**, (1) roof (**techo**) of a shed, etc. ; (2) hovel, *see* **jacal** (1).
- COCHIZO**, (2) Peru, stromeyerite (Raimondi), *see* **agujilla** (1) (suppl.) ; (3) **c. falso**, Cerro de Pasco, Peru, bournonite (Raimondi).
- COCHURA**, *see* **vuelta** (4) (suppl.).
- COLHER**, Port. blast. scraper (R. B. Johnston), *see* **cuchara** (4).
- COMPAÑERO**, Almaden, Sp. strand of a rope, *see* **cordón** (2).
- CONGELO**, Chile, floor of **caliche** (1), formed of loose sand, sulphate salts, chlorides mixed with clay, and many isolated crystals of selenite (E. Kaempffer), *comp.* **tapa** (2) (suppl.).
- CONO**, (4) **c. desenlodador**, mech. prep. sort of masonry hopper where the ore is washed clean by a current of water before being sorted, *syn.* Linares, Sp. **tolva** (3), *see* **pesca** (suppl.) ; (5) **c. distribuidor**, met. distributing cone of a shaft-furnace, *syn.* **válvula distribuidor**.
- CONTADOR**, (4) **c. de cubas**, Almaden, Sp. lander at surface or at mouth of **torno** (6) (Ezquerria), *see* **amainador**, *comp.* **cargador** (suppl.).
- CONTRAVIENTO**, met. arched side of Catalan forge, opposite the **twyer** (Fr. **contrevent** or ore).
- CORRIDA**, (3) Linares, Sp. in **boliche** (5) lead-smelting, the third or running-down stage, *comp.* **blandeó**, *u.* **caldeo**, **resubida** (suppl.).
- CORTAFUEGO**, met. damper of a furnace, *see* **registro** (3).
- CORTE**, (18) Huacho, Peru, in the "Pampas de las Salinas," place where the salt is cut, *see u.* **curar** (2) (suppl.).
- COSTILLARES**, Guan. Mex. round irregular polings, from secondary branches, used for transit purposes in inclined shafts (Hermosa).
- CRIAÇÃO**, Port. mineral deposit, *see* **criadero** (1), **jazida** (suppl.).
- CRIBA**, mech. prep. Cartagena, Sp. hand-jig with two hutches ; one with only one hutch = **media c.** (Moncada) ; **c. de trepidación**, shaking screen, used in classifying coal in place of **rejillas fijas** (suppl.), *syn.* Asturias, Sp. **cribos** ; **cribas de sacudimientos**, jiggers, including **cribas intermitentes** (*e.g.*, **c. de cuba**, German hand-jigger, **c. inglesa** or **riquitrúm**), and **cribas continuas** (*e.g.*, **cribas filtrantes** or **cribas del Harz**) ; *see u.* **despajar** and **emparejar**, **pava** (2), **pistón** (suppl.).



- CRIBADO**, (2) Asturias, Sp. screened coal of over 45 or 50 mm. (Moncada), *comp.* *galleta*, *granza* (1), *grancilla*, *finos* (suppl.).
- CRISOL**, (2) crucible or well in the floor of a reverberatory furnace, *syn.* *pila* (9), *pileta* (3), *reposador* (5).
- CRUDIOS**, Mex. met. iron matte (Hermosa), *see* *hierro* (5).
- CUADRO**, (6) Bol. plat, *see* *cóncavo*; (7) table or index.
- CUELLO**, (5) short tube or neck by which air passes out of a fan or blower.
- CURAR**, (1) c. *el circo de la calentura ó de la frialdad*, Cerro de Pasco, Peru, in the patio process, to add certain reagents, *see u.* *curtir*, *frío ía*; (2) c. *las piedras*, Huacho, Peru, to increase the weight of blocks of salt by spreading them out in the *corte* (18) (suppl.), and covering each with a layer of pieces of salt—water saturated with salt afterwards forms the whole into one (Raimondi), *comp.* *ahogar* (3) (suppl.).
- CUSTANEIRAS**, Port. timb. slabs (R. B. Johnston), *see* *costero* (1).
- DELINEADOR**, (1) draughtsman; (2) Almaden, Sp. mine surveyor, *see u.* *agrimensor*.
- DEPÓSITO**, (11) oil vessel of a lamp, *see* *candileja* (2).
- DEPURACIÓN**, mech. prep. washing (*lavadura*) of small coal (Fr. *depuration*); d. *de gas*, purification of gas.
- DEPURADOR**, d. *de agua*, water-purifier for gas, generally bell-shaped and of one or two cb. m. capacity.
- DERECHO**, (4) *derechos de los mineros*, miners' rights or privileges.
- DERRETIDO**, Rio Tinto, Sp. met. fusion of calcined balls of copper ore for black copper (Barinaga), *see* *calentador* (suppl.).
- DESANCHE**, *see* *caes* (suppl.).
- DESBASTAR**, (3) mech. prep. to separate a large amount of waste from an ore.
- DESBASTE**, (3) mech. prep. separation of waste from an ore; coarse classification.
- DESCARGADERO**, (2) ore-pass or -shoot (Ezquerria), *see* *paso* (2).
- DESCARGADORA**, *see u.* *lavadero* (3) (suppl.).
- DESLAME**, Mex. mech. prep. method of separating the coarse metalliferous particles (*jalsontles*) from the fine; it was formerly done in elliptical tanks (*pilas de deslamar*, *syn.* *Guan. cajetes*), or in a *laberinto*.
- DESPAJAR**, *criba de d.*, Sierra Almagrera, Sp. circular hand-sieve with mesh of 2 cm. (radius) by 8 cm. (circumference). The smalls (*tierras*) from the mine are screened through this, *comp.* *emparejar* (3) (suppl.); *despajar*, to screen with the above.
- DESPOJO**, (2) *despojos*, mech. prep. products which for lack of water are too poor to mill, and are therefore sold to *lavadores* or owners of *polveros* (suppl.), *syn.* *horruras* (2).
- DESQUINCHAR**, Peru, to take down the walls [*see* *quincha* (suppl.)] of a lode, *see* *ensanchar*.

- DESTAJE, DESTAJO**, (2) Peru, open-cut, *see* **tajo** (2); **arranque á d.**, crude method of mining, or taking down the ore from the roof, and filling the floor with deads, or leaving the whole open, *syn.* **tajeo**.
- DIRECÇÃO**, Port. geol. strike, *see* **rumbo** (3).
- DISOLVEDORES**, Rio Tinto, Sp. masonry tanks in which calcined copper ore is dissolved. The solution passes to settling-tanks (**pilones reposadores**), and then to cementing-tanks (**pilones cementadores** (Barinaga)).
- EMBASTE**, Sierra Almagrera, Sp. product of hand-jigging, afterwards passed through the **criba de emparejar**, *comp.* **majuelo** (suppl.); Cartagena, Sp. intermediate product obtained on the **mesa de arroyo**, afterwards washed in a **criba de espesa** [*see u.* **pava** (2) (suppl.)].
- EMPADRONAR**, to register claims, etc., *see* **padrón** (suppl.).
- EMPANTURRARSE**, *see* **tenderse** (suppl.).
- EMPAREJAR**, (3) Sierra Almagrera, Sp. mech. prep. circular sieve, with mesh of 5 mm. (radius) by 55 mm. (circumference) (Moncada), *comp.* **despajar**; the **embaste** from the hand-jigs is screened by above, yielding two products—**garbancillo**, which does not pass the sieve, and **recribo**, which does. The former is again hand-jigged, yielding **recortes** (with 15 to 20 centimos of silver), and **peleperches** ( $\frac{1}{2}$  oz. silver) (Moncada), *see* **recortes** (6).
- ENCAJETADO**, Hualgáyoc, Peru, **pacos** with spots of sulphide of silver in a state of decomposition (Raimondi), *comp.* **chancaca** (2) (suppl.).
- ENCARCELADO**, complete frame of timber for a shaft (Ezquerria), *see u.* **cuadro** (1).
- ENCHASCADO**, Rio Tinto, Sp. met. bundle of firewood, 1 m. thick, at the base of a **telera**, and lying on **tierras**, 10 cm. thick (Barinaga).
- ENCUÑAR**, (2) to excavate or break rock with a wedge [**cuña** (1)] (Ezquerria).
- ENGATILLADO**, met. tie-rods used to strengthen the outer walls of furnaces, etc.
- ENTIVAÇÃO**, Port. timbering, *see* **entibación**.
- ENTULHO** (rubbish), Port. waste rock or attle (R. B. Johnston), *see* **desecho** (3).
- ENXADA**, Port. hoe; in Braz. a hoe is used for loading ore or auriferous gravel into **carombés**, *see* **azadón** (1) and (3).
- ESCADA**, Port. ladder, *see* **escala** (1) and **escalera** (2).
- ESCAFANDRA DE TUBO**, apparatus for breathing in foul air, connected by a tube with a pump or bellows, *comp.* **aerofora**.
- ESCAMONDA**, *see* **monda**.
- ESCARZANO, NA**, adj. *see u.* **arco** (suppl.).
- ESCOMBREROS**, *see* **desechadores**.
- ESCOMBROS**, (4) Fr. Guiana, alluv. m. overburden [**montera** (3)], consisting of red and yellow variegated clays containing pebbles, etc. (L. Levat).

- ESCORA**, Port. prop. stay ; timb. inclined stay (R. B. Johnston), *see* . **tornapunta** (1).
- ESMERIL**, (3) Mex. arsenical pyrites, *see u.* **bronce** (3).
- ESMERIL**, Port. (1) emery, *see* **esmeril** (1) ; (2) Minas Geraes, Braz. specular iron ore (Spix and Martius), *see u.* **hierro** (4).
- ESPESA**, *see u.* **pava** (2) (suppl.).
- ESPUMADERA**, met. perforated ladle for cleansing molten metal.
- ESTANQUE**, (5) Sierra Almagrera, Sp. mech. prep. hand-jig, *see* **riquitrúm**.
- ESTIERCOLERO**, Mex. rubbish-carrier (J. Guillemin), *comp.* **desechadero**.
- ESTRANGOL** (from Fr. *étranguillon*), met. the contracted part of the vertical tube of a trompe [**trompa** (1)].
- ESTRIBO**, (2) Peru, buttress or small pillar, 0·6 to 1 m. in diameter, left to support the walls of a lode (Santolalla), *comp.* **puente** (11) (suppl.).
- ESTUFA**, met. stove or tubular apparatus for heating air for hot blast.
- ESVIAJE**, *see u.* **arco** (suppl.).
- ETALAJES** (Fr. *étalages*), met. the "boshes" of a blast-furnace [**horno** (2) alto], extending from the "belly" (**vientre**) to the "hearth" [**obra** (5)].
- EXPLANADA** (mil. slope), level space near a furnace, etc., for making the smelting mixture or **parva** (suppl.), *comp.* **echadero**.
- FAIXA**, Port. band of ore [**faja** (1)], belt of rock [**faja** (2)], etc.
- FALDEOS**, Bol. ancient auriferous alluvial deposits (Comynnet).  
NOTE.—Recent ones = **veneros** (5).
- FILÃO**, Port. vein or lode, *see* **filón** (1), **veia** (1).
- FINOS**, Asturias, Sp. screened coal from 0 to 5 or 6 mm. in size (Moncada), *comp.* **cribado** (2), **galleta**, **granza** (1), **grancilla** (suppl.).
- FINTA**, Port. tax, impost ; **fintas**, Braz. fixed annual contributions on mines, etc., *see* **derecho** (2).
- FOGO**, Port. fire ; **dar f. ao barreno**, to fire the drill-hole (Span. **pegar el barreno**) (R. B. Johnston).
- FOGUETEIRO** (fire-worker), Braz. blast. loader and firer (P. Ferrand).
- FORJA**, (1) **método en forjas**, met. ore-hearth process (lead-smelting).
- FOSA**, (1) **carbonización en fosas**, carbonisation in pits (Chinese method of making charcoal), *comp. u.* **carbonera** (1) (suppl.).
- FRANJILLA**, Hualgáyoc, Peru, argentiferous galena (**galena**) with stibnite [**antimonio** (2) **gris**] (Raimondi).
- FRENTES**, Port. short sides of a shaft [Span. **testeros** (4)] (R. B. Johnston), *comp.* **lados** (suppl.).
- FUERO**, (4) **fueros**, Mex. privileges and prerogatives (J. Guillemin).
- FUEGO**, (5) *see u.* **brasa** (suppl.).
- FURO**, Port. (1) blast. borehole, *see* **barreno** (1), **buraco** (2), (suppl.)  
f. **ascendente** or **chulana**, upward hole ; f. **de estaca**, downward hole ;  
f. **de peito**, horizontal hole ; f. **de piso**, drill-hole in the floor (R. B.



Johnston); (2) f. d'ar, quarr. jumper [Span. *barreno* (3) *de viento*] (R. B. Johnston); *furos pequenos* = *pistoletes* (2) or *puntagos* (suppl.).

**GACHAS**, met. in lead-smelting, slags from a shaft-furnace (Sánchez), *see* *escoria* (1), *comp.* *horrura* (3) (suppl.).

**GACHEARSE**, met. to agglutinate (of lead ores being roasted) through excess of temperature (Sánchez); to partially melt, forming a hard and compact glass.

**GACHEO**, met. coagulation or incipient fusion, *see* *gachearse* (suppl.).

**GAIOLA**, Port. hoist. cage, *see* *jaula* (2).

**GALLETAS**, Asturias, Sp. screened coal from 20 or 25 mm. up to 45 or 50 mm. (Moncada), *comp.* *cribado* (2), *granza* (1), *grancilla*, *finos* (suppl.).

**GARBANCILLO**, *see u.* *emparejar* (3) (suppl.).

**GARABATERO**, hoist. on-setter (Ezquerria), *see* *enganchador* (1).

**GARBILLADOR**, (1) Cartagena, Sp. man who uses the *garbillo* (1); (2) Sierra Almagrera, Sp. screener or one who jigs ore, *see* *garbillo* (3).

**GAVETA**, Porto Rico, alluv. m. a kind of *batea*, 16 in. in diameter and 5 in. deep.

**GÉNEROS POBRES**, *see u.* *polveros* (suppl.).

**GOISÓN**, Cerro de Pasco, Peru, pivot on which the cross-beam of a Chilian mill revolves (O. F. Pfordte), *see* *gorrón* (1).

**GRADILLA**, (2) mould (*molde*) for turf, bricks, etc.

**GRANCILLA**, Asturias, Sp. screened coal from 5 to 6 up to 10 or 12 mm. (Moncada), *comp.* *cribado* (2), *galleta*, *granza* (1), *finos* (suppl.).

**GRANEL**, *carga* (4) á g. met. charging a blast-furnace, so as to leave the fuel in the centre, and the smelting-mixture (*parva*) surrounding it.

**GRANZA**, (1) Asturias, Sp. screened coal from 10 or 12 mm. up to 20 or 25 mm. (Moncada), *comp.* *cribado* (2), *galleta*, *grancilla*, *finos* (suppl.).

**GRAVA**, *gravas* [*see u.* *granza* (1)], mech. prep. Sierra Almagrera, Sp. a product consisting of pieces 5 cm. long, with spots of ore; Cartagena, Sp. a product containing 6 to 8 per cent. of lead, obtained from *tierras de corte* (Moncada), *comp.* *chirrete* (suppl.).

**GEDA**, (7) Fr. Guiana, alluv. m. a compact, soapy, bluish, greenish grey or white layer; it is the ancient schistose bed-rock [*roca* (6)], highly altered (L. Levat); (8) Bol alluv. m. a bed of irregular fragments of schist and granite, with argillaceous sand, covering the pay-dirt (*venero*) (Comynet).

**GRUESO**, Arnao, Sp. screened coal up to 7 cm. in size (Moncada).

**GUALDA**, (2) Chacas, Peru, bornite (E. I. Dueñas), *see u.* *cobre* (2).

**GUARDILLONES**, Sierra Almagrera, Sp. ore of the fourth or poorest class, containing 6 adarmes of silver per quintal, and no lead (Ezquerria), *comp.* *recio* (suppl.).

**GUËMBA**, Guan. Mex. large unsawn log (Hermosa), *comp.* *solera* (12) (suppl.).

**GUÍA**, (19) Mex. in the patio process, a small portion of the *torta* used for experimental purposes; Peru, the test, *see* *tentadura* (1).

**GUIA**, Port. pass, warrant; **carta de g.**, safe-conduct; Braz. formerly, permit of circulation of marked bars, showing that the **quinto** tax, etc., had been paid.

**GUIADEIRAS**, Port. hoist. wooden guides, *see* **guiaderas**.

**GUINDASTE**, Port. (1) windlass, *see* **torno** (2); (2) crane, *see* **grúa**; (3) hoist. pulley-frame (R. B. Johnston), *see* **horca** (1).

**HACER**, h. la sangría, met. to tap a furnace, *syn.* h. la suelta.

**HIERRO**, (11) **hierros**, Mex. blackish powder on amalgam washed from the **tin**s (1).

**HOGAR**, (4) met. open furnace like the Catalan forge [**forja** (1) **catalana**].

**HOLLÍN**, soot or condensed smoke, *comp.* **carbonilla** (2) (suppl.).

**HOMBRILLO** (gusset), **hombrillos**, met. side walls of a reverberatory furnace which carry the doors and which support the arch laterally (**Ibran**).

**HORCÓN**, Huamachuco (Prov.), Peru, timb. leg-piece with forked end, *see* **peón** (4).

**HORMIGÓN**, (2) met. a mixture of highly refractory material and coal dust, used for the beds or bottoms of some furnaces.

**HORNO**, (2) h. atmosférico = h. de gran tiro (draught-furnace); h. de llama = h. reverbero or de reverbero; h. de marca, Mex. large cupelling-furnace (**plata de marca** = silver from ditto), *see* **cópola** (1); h. de pudlado, puddling-furnace, *syn.* h. de bolas; h. de refino, refinery furnace; h. de viento forzado, blast-furnace; h. regenerador de Siemens, Siemens regenerating furnace.

**HORRURA**, (2) *see* **despojo** (2) (suppl.); (3) **horruras**, met. slags from a reverberatory furnace, usually rich in lead (**Sánchez**), *see* **escoria** (1), *comp.* **gachas** (suppl.).

**HUAIRA**, Peru, (3) gallery driven in hard rock or "country" by the side of a vein (**Santolalla**).

**HUECARRERA**, cavern filled with ore, and encrusted with stalactites and stalagmites (**J. Pié y Allué**), *see* **soplado**.

**HUESO**, (3) Chile, yellowish compact nitrate of soda, *see* **huesudo** [**u. caliche** (1)].

**HÚNGARO**, Peru, met. roasting furnace with two beds, arranged one over the other.

**IDURIGUELA**, Vizcaya (Prov.), Sp. back of Catalan forge (**Fr. cave**).

**INCLINAÇÃO**, Port. geol. dip, *see* **echado**.

**INCORPORO**, Cerro de Pasco, Peru, the mixing of the mercury in the mud-heap, following the **hormiguillo** (2), *see* **volteo** (suppl.).

**ITAIPAVA**, Braz. alluv. m. sort of screen, used in rivers of rapid current behind which rich **cascalho** (2) accumulates (**P. Ferrand**).

**JACARANDA**, **jacaranda-tão**, Minas Geraes, Braz. a wood of which the stems of native stamps are made (**P. Ferrand**).

- JAZIDA**, layer or seam ; ore or mineral deposit, *see criadero* (1), *yacimiento* (1).
- JURUBEBA**, Minas Geraes, Braz. a plant, the juice of which is used in the *caco*, when washing ores or alluvial sands containing fine gold. It is the *Solanum passiculatum* of botanists. Other plants used for the same purpose are *maracuja-assu* (*Passiflora quadrangularis*), *enxota* or *santa-anna* and *pegadeiro* (*syn. matto-pasto, herva do vigario*), the last two belong to the genus *Eupatorium* (P. Ferrand), *comp. tulmac* (suppl.).
- LABORÍO**, Peru, mine-working, *see labor* (2).
- LABRA**, (3) cutting or hewing timber ; *media* 1., rough-hewn.
- LADOS**, Port. long sides of a rectangular shaft (Span. *costados*) (R. B. Johnston), *comp. frentes* (suppl.).
- LÁGUENA**, (2) met. cement made of refractory clay.
- LAJA**, *see rubiales* (suppl.).
- LARGURA**, Port. breadth, width ; 1. *do filão*, thickness of a vein, *see anchura, potencia*.
- LATERAL**, Bol. a level driven along the side of a lode or other deposit.
- LATÕES**, Port. large and irregular branches (R. B. Johnston), *see latón* (2).
- LAUNA**, magnesian clay of a grey colour, which forms a homogeneous and impermeable paste with water (Acad.) ; results from the decomposition of slate, and is used for forming the bed of the *boliche* (5) furnace (Ibran), *see rubiales* (suppl.).
- LAVA**, (3) Mazarrón, Sp. dressing-floors, *syn. Cartagena*, Sp. *lavado* or *trajín de lavado*, *see lavadero* (1).
- LAVADERO**, (3) 1. *de cajón* or *de pileta*, Mex. mech. prep. box-settler, sometimes replacing the vat or *tina* ; 1. *de tinas*, one to four *tinas* which communicate with one another ; one having an opening for the discharge of the slime = *descargadora*—the rest are *cargadoras* (Hermosa), *see tina* (1).
- LAVADO**, *see lava* (3) (suppl.).
- LECHO**, (7) floor of a bed or seam (Ezquerria), *see piso* (3).
- LEÑA**, 1. *rajada*, firewood cut up with an axe, split firewood.
- LEÑOSO**, woody part of trees, shrubs, etc., as distinguished from the bark (*corteza*).
- LEVANTO**, Cerro de Pasco, Peru, in the *patio* process, the removal of the mud-heap, after it has been left for about a week (*descanso*) after the *incorporo* (suppl.).
- LIÑUELO**, 1. *principal*, Almaden, Sp. small rope or cord, *syn. Rio Tinto, ramal* (6) (Ezquerria), *see cuerda* (1).
- LIS**, Bol. the *ceja* of mercury formed in the *chua* ; 1. *de azogue*, dull, runs into little grains when pressed by finger ; 1. *de plata*, bright, resembles silver filings on rubbing and floats on water ; 1. *de pella*, rather dull, becomes solid on rubbing (L. Lemuhot).



- LIXIVIADOR**, met. man in charge of leaching.
- LLAMPO**, (1) Cerro de Pasco, Peru, fines which have passed the screen (O. F. Pfordte), *comp.* **cernidos** (suppl.).
- LLANTA**, (3) rim of a pulley (Moncada), *see* **aro** (3).
- LLAUCA** (Yauca), (2) Peru, a flucan of black clay, sometimes found in veins, compressed, smooth to the touch, and with a greasy lustre; it is crushed "country" (E. I. Dueñas), *comp.* **formación** (3), *u.* **guarda** (1).
- LOBO**, (2) **lobos**, met. furnace accretions or "bears" on the hearth of a blast-furnace, *syn.* **zamarra**, *comp.* **acampanar** (2) (suppl.), **pegadura** (4).
- LUCERNAS**, Roman clay-lamps (**lámparas**) found at Rio Tinto (Ezquerria).
- LUMBRERA**, (4) Linares, Sp. hearth proper [**hogar** (1)] of a furnace, or the portion above the grate [**rejilla** (3)] (Sánchez), *comp.* **zabaleta** (suppl.).
- LUMBRERO**, Linares, Sp. stoker of a furnace, *see* **fogonero**.
- MACHACADERA**, Sierra Almagrera, Sp. mech. prep. hard stone on which ores are broken by hand (Moncada).
- MACHADO**, Port. axe or hatchet, *see* **hacha** (1).
- MACHETA**, Sierra de Gador, Sp. blast. sledge weighing 5 or 6 lb. (Ezquerria), *see* **maza** (3).
- MACIZO**, (7) *see* *u.* **plata** (2) (suppl.); (8) met. mantle, outer stack or building of a blast-furnace [**horno** (2) **alto**]; (9) met. a large block of masonry containing a number of coke-ovens—may consist of one or two batteries.
- MADRE**, (8) Cerro de Pasco, Peru, cross-beam of a Chilian mill (O. F. Pfordte), *comp.* **espeque** (1).
- MAESTRANZA**, Bol. workshops, *see* **taller** (1).
- MAJUELO**, Sierra Almagrera, Sp. waste obtained in hand-jigging, *comp.* **embaste** (suppl.).
- MALACACHETA**, Minas Geraes, Braz. fine softened mica of a yellow and pinchbeck-brown earth—topazes are found in it (Spix and Martius), *comp.* *u.* **massa** (suppl.).
- MAMONA**, Port. **oleo de m.**, castor oil, used in miners' lamps in Minas Geraes, Braz.
- MANEA**, Huamachuco (Prov.), Peru, timb. supplementary cap-piece (Santolalla), *see* **abrazadera** (5).
- MANIJA**, (2) handle of a winch, *see* **cigüeña** (1).
- MANIVELA**, (3) crank of a steam-engine (Moncada), *see* **manubrio** (3).
- MANO**, (9) *see* **ciarzulo** (suppl.).
- MANTO**, (7) **mantos**, Maravatío, Mich. Mex. deposits formed from the weathering of outcrops of lodes; they occur with fragments of slate in depressions of the surface, and contain a certain proportion of gold (J. D. Villarello).

- MARCADOR**, assay-master, *see* **contraste** (1).
- MARCADOR**, Port. marker; Braz. quarr. official who marks holes to be bored (P. Ferrand), *see* **ponedores** (suppl.).
- MARRÃO, MARRETA**, Port. blast. sledge-hammer, *see* **maza** (3).
- MARTELLO**, Port. hammer, *see* **martillo**.
- MASCARILLA**, mask; m. **para el humo**, mask of the pneumataphore, *see* **careta**, *comp.* **casco** (2) (suppl.).
- MASSA**, Port. irregular deposit (R. B. Johnston), *see* **masa** (3); m. **branca**, Minas Geraes, Braz. white or brown ferruginous earth, the surest indication of the presence of the topaz (Spix and Martius), *comp. u.* **malacacheta** (suppl.).
- MATA**, (3) Cerro de Pasco, Peru, in the **patio** process, the final addition of mercury, to facilitate the reunion of that already added, which is in a very finely divided condition, *comp.* **baño** (1); (4) small shrub; bundles of firewood (**leña**), formed of large shrubs (**arbustos**) and **matas**, are called prov. **haces de monte bajo** or **barda** (Ibran).
- MATAR EL CIRCO**, Cerro de Pasco, Peru, to add the last amount of mercury, *see* **mata** (3) (suppl.).
- MAZO**, (4) m. **mayor**, Vizcaya (Prov.), Sp. large hammer (Fr. **martinete**) of Catalan forge (Barinaga).
- MENUDO**, Arnao, Sp. screened coal from impalpable powder to 1 cm. in size (Moneada), *comp.* **grueso**, **cascote**, **cascotín** (suppl.); m. **bruto**, Asturias, Sp. small coal that passes the screens.
- MESA**, (1) mech. prep. m. **de embudo** (2), concave round-buddle; m. **de escoba**, sleeping-table (m. **durmiente**), equiv. Ger. **Kehrrherd**.
- MESETA**, (4) met. inclined plane, forming the continuation of the dam (**dama**) of a blast-furnace [**horno** (2) **alto**], etc.
- MESTRE**, Port. adj. main, *e.g.*, **poço** (2) m., main shaft.
- METAL**, (3) m. **amarillo**, calaverite or telluride of gold; m. **blanco**, cerargyrite, *see u.* **plata** (2); m. **gráfico**, graphic tellurium or sylvanite; m. **hojosa**, magyagite or foliated tellurium (Ger. **Blättererz**); m. **pastoso**, *see u.* **pastoso**, sa (suppl.); m. **polvorilla** or **polvorilla de plata**, *see* **polvorilla** (1).
- METRALLA**, met. small pellets thrown off the mould, when making pigs of cast-iron (Acad.).
- MEZCLADOR**, mixer, used in making briquettes, etc.
- MINERIO**, Port. ore, *see* **mena** (2).
- MOGOTES**, Peru, visible outcrops; superficial portion of an ore-deposit, *see* **afioramiento**, **brotazón**, *u.* **cogollo**.
- MOLDEO**, met. moulding of turf, bricks, retorts, etc.
- MOLEDOR**, (1) **moleadores**, Fresnillo, Mex. mech. prep. rolls (Hermosa), *see* **cilindro** (4); (2) Peru, man in charge of grinding the ore.
- MOLINO**, (1) m. **de muelas**, grindstone mill, *e.g.*, Chilian mill; m. **de tubo**, tube-mill.
- MOSQUEADO, DA**, adj. **panizo mosqueado**, Hualgáyo, Peru, "country" (trahyte) spotted with ore (Raimondi).

**MULA**, (2) Mex. in the *patio* process, a stick used by the *repasadores* as a support to enable them to slide the feet over the mud with a scrubbing action (*Hermosa*).

**MURADO, DA**, pp. of *murar*, to wall; *plaza murada*, walled floor for heap-roasting.

**NEGRILLO**, (8) *Hualgáyoc*, Peru, a blackish mineral containing oxide of copper, iron or manganese (*Raimondi*).

**NIVEIS**, Port. timb. *sollar* or platform for holding deads (*R. B. Johnston*), *see puente* (5).

**NOQUE**, (3) Peru, in the *patio* process, a conical canvas sack terminating in a leather bag for separating the mercury from the amalgam (*Santolalla*), *comp. manga* (2).

**NUCLEO**, (3) *nucleos*, Rio Tinto, Sp. nodules of copper ore.

**OBISPO** (bishop), Chile, *caliche* (1), veined with, or completely coloured by, violet tints (*E. Kaempffer*), *comp. azufrado* (4) (suppl.).

**OBTURADOR, TRIZ**, adj. *aparato de tolva y cono obturador*, met. "cup and cone" apparatus for closing the mouth of a blast-furnace [*horno* (2) *alto*].

**OJO**, (15) *ojos*, port-holes of a ventilating fan or blower (*Ibran*); (16) eye or small end of twyer (*tobera*).

**OROJERAS**, Mex. met. in the *horno* (2) *castellano*, two inclined planes of adobes, made from one side of the mouth to the other, to prevent the charcoal and smelting-charge from spilling over (*Hermosa*).

**ORUJO**, S. Sp. skins and residues of olives, used as fuel (*combustible*) in some mines and works.

**OTRA, á otra!** *Sierra Almagrera*, Sp. call of the *capataz* when the time is up for the miners to return to work (*Ezquerria*), *comp. cadena* (11) and *tabaco* (suppl.).

**PACOSO, SA**, adj. Peru, gossany or containing *pacos* (1).

**PADRÓN**, register of claim denounced, etc., *see empadronar* (suppl.).

**PAIOL**, Port. (1) *p. da polvora*, powder-magazine; (2) *Minas Geraes*, Braz. room or building used for sorting ore, etc.

**PALA**, (5) Mex. in the *patio* process, the name given to the treading (*repaso*) of the *torta* by men, first in one direction, then perpendicular to it, and afterwards in a circle, commencing at the outside edge and finishing in the centre (*tres pisadas*), finally turning the *torta* over (*volteada*), that next the floor being put on the top (*Hermosa*).

**PALANCA-ALDÍA**, *Vizcaya* (Prov.), Sp. the piece of iron, used as a fulcrum, for raising the "bloom" of a Catalan forge, *syn. restanca*, equiv. Fr. *respalme*.

**PALANQUINERO**, *Cartagena*, Sp. mech. prep. man who works the brake of a hand-jig or *riquitrúm*.



- PARADOR**, Huamachuco (Prov.), Peru, timb. leg-piece (Santolalla), *see* *peón* (4).
- PARALELA**, a gallery (*galería*) driven parallel to a main road (Ezquerria).
- PARVA**, smelting mixture, charge, *syn.* *lecho* (4) *de fusión*, *see u.* *carga* (4).
- PARVEROS**, men employed in making smelting-mixtures or charges.
- PASSADOR**, Minas Geraes, Braz. mech. prep. distributing-box (P. Ferrand).
- PASTOSO**, *SA*, adj. *metal pastoso*, Mex. argentiferous tetrahedrite (Hermosa), *see u.* *cobre* (2).
- PATA**, (2) *p. de cabra*, Peru, timb. joint formed by two oblique cuts on the leg, making a very obtuse angle with the cap (Santolalla), *see* *ajuste* (3).
- PAVA**, (2) *criba de p.*, Cartagena, Sp. screen with mesh greater than 1 mm. ; when less than 1 mm. = *criba de espesa* (Moncada).
- PAVONADO**, (3) Peru, bournonite or "wheel ore" (Santolalla), *see u.* *pastoso*, *sa*.
- PECHO**, (4) *p. de paloma*, Chacas, Peru, metallic stains, due to iron salts, on the surface of layers of coal seams (E. I. Dueñas) ; (5) *p. del horno*, *see* *bigote* (1).
- PEDREIRO**, Port. (1) stone-cutter, *see* *pedrero* ; (2) *pedreiros*, Braz. masons who construct dry-walls in mines (P. Ferrand)—they correspond to the "packers" of coal mines, and the "builders-up" of ironstone mines, *see* *pedricero*.
- PELEPERCHES**, *see u.* *emparejar* (3) (suppl.).
- PELO**, (7) *p. de venado*, Chacas, Peru, stibnite in very fine needles (E. I. Dueñas), *see u.* *antimonio* (2).
- PÉRTIGA**, long pole or rod, *see* *vara* (1) ; long stake (*estaca*).
- PESCA**, *caja de p.* (Ger. *Durchlass*), mech. prep. box in which small ore is retained after being washed clean in the *cono* (4) (suppl.) ; the two channels at the head of a labyrinth [*laberinto* (1)] for catching coarse material accompanying slimes.
- PESO**, (5) Almaden, Sp. a weight equal to 20 *arrobas*, *see u.* *solera* (13) (suppl.).
- PETLANQUE**, *p. acerado*, Mex. light ruby silver (Hermosa), *see* remarks *u.* *petlanqua*.
- PICADOR**, (1) m.m. miner who works with a pick, or with hammer and gad, in contradistinction to a borer or driller [*barrenero* (1)], *see u.* *barretero* ; (4) Sierra Almagrera, Sp. ore-sorter (Ezquerria), *see* *apartador* (1).
- PICAPEDRERO**, stone-cutter, *see* *pedrero*.
- PICAPORRO**, that of Almaden, Sp. is a straight pick, 14 to 18 in. long, from 13 to 14 lb. in weight, and having a handle 3 ft. long ; it is used for obtaining flags for arches and as a *punterola* (Ezquerria).
- PICAR**, (1) m.m. to work with a pick, or with hammer and gad.

- PIÇARRA**, Port. slate-rock, *see* **pizarra**.
- PILA**, (9) the well or crucible of a reverberatory furnace (Ibran), *see* **crisol** (2) (suppl.); (10) crucible of a blast-furnace, *see* **crisol** (1).
- PINCHAR**, met. to tap, *see* **sangrar** (3).
- PINZANASAL**, nasal pinchers, used in a pneumataphore (aeroforo), *comp.* **tapanariz** (suppl.).
- PIQUETILLA**, according to Ezquerria, a gad [cuña (1)] or punterola used by stone-cutters.
- PISTÓN**, (4) Asturias, Sp. in coal-washing, a piston-jig (criba) worked by hand.
- PLANALTO**, Braz. table-land, plateau, *see* **meseta** (4), *comp.* **campina** (suppl.).
- PLATA**, (2) p. **virgen**, native silver, *syn.* Cerro de Pasco, Peru, **barra** (11), **macizo** (7) (Raimondi).
- PLATEADO**, DA, adj. silvered; metal **plateado** or **puro plateado**, Peru, solid copper ore, containing 66 per cent. metal.
- PLATILLO**, (5) **platillos**, the boards of bellows [fuelle (1)].
- PLOMIZOS**, p. de **acarreo**, pieces of galena, somewhat silver-bearing, which have accumulated and form a bed of drift in a tertiary formation; the **carbonatos p.**, of Cartagena, contain pieces of carbonate of lead as well as sulphate (Ezquerria).
- PLUMO**, *see* **prumo** (suppl.).
- PODRIDO**, *see* u. **sótano** (2) (suppl.).
- POLVEROS**, mech. prep. **haciendas**, specially erected for treating low-grade ores known as **géneros pobres** (Moncada).
- POLVORILLA**, (5) Peru, stephanite or **plata negra** (b), *see* **psaturosa**; (6) Cerro de Pasco, Peru, sternbergite (Raimondi).
- PONEDORES**, blast. men who are expert in marking the position of the boreholes (but generally done by **capataces**) (Ezquerria), *see* u. **barra** (6), and u. **marcador** (suppl.).
- PONGO**, Peru and Ec. narrow and dangerous pass of a river, *see* **angostura** (2), **paso** (4).
- PORTEZUELA**, (2) *see* u. **válvula** (suppl.).
- POSTURA**, Cerro de Pasco, Peru, in the **patio** process, the separation of the silver from the mercury by distillation (Raimondi), *see* **refoga** (1).
- POZA** (pool), (1) **pozas**, Mex. deep depressions or grooves, used in the conduit or **tendido** (8) (suppl.); (2) Sandia, Peru, deep pool in a river, in which gold is often deposited, *see* **remanso**.
- POZAL**, (1) bucket of a well, *see* **balde**; (2) kibble (Ezquerria), *see* **cubo** (2); (3) curb-stone, collar or brace of a well, *see* **boca** (2), **brocal** (3).
- POZO**, (5) **pozos**, Cerro de Pasco, Peru, in the **patio** process, hemispherical stone vessels, lined with cow-hide, in which the amalgam is washed. There are generally three, the **capitana** (2) and two **relevanas**, connected by a channel or ditch lined with sheep-skin (**sabanillas**) (Raimondi), *see* **tina** (5) (suppl.), *comp.* **pila** (1).

**PRAIA**, Port. shore ; Braz. valley.

**PRANCHA**, Port. plank or thick board, *see* **tablón**, *comp.* **taboa** (suppl.).

**PRENSA**, (4) brake (Ezquerria), *see* **freno** (2) ; **torno de p.**, brake-winch, equiv. Ger. **Bremsen**.

**PROVIDOR**, Braz. formerly collector of the **quinto** and other royal taxes.

**PRUMO**, Port. (1) plummet ; plumb-line, *syn.* **plumo**, *see* **plomada** ; (2) **prumos**, timb. leg or leg-piece (R. B. Johnston), *see* **peón** (4).

**PUENTE**, (11) Peru, long arch or pillar of ground left to support the walls of a lode (Santolalla), *comp.* **contrafuerte** (2), **estribo** (2) (suppl.).

**PUERTA**, (1) **p. de carga**, fire-hole of a reverberatory furnace, etc., *syn.* **atizador**, **buitrón** (5), **p. de hogar** (1).

**PULMÓN** (lung), inflatable air-sack or breathing-bag of a pneumataphore (*e.g.*, Dräger's), *see* **colchón**.

**PUNTAGOS**, quarr. short boreholes for blasting large stones (R. B. Johnston), *see* **u. furo** (suppl.), *comp.* **pistolete** (2).

**PUNTEIRA**, Port. punterola of the Spanish (R. B. Johnston).

**PURGA** (purge), (1) Cartagena, Sp. in lead-smelting in the blast-furnace, two charges of slag, added subsequently to the charges of ore, in order to clean the furnace and avoid obstructions (Sánchez), *syn.* **refundida** ; (2) **purga**, slag added in (1).

**QUADRO**, Port. timb. frame, *see* **cuadro** (1).

**QUESOS**, (2) Cerro de Pasco, Peru, pressed amalgam-cakes (O. F. Pfordte), *see* **bollo** (1).

**QUINCHA**, Peru, a wall [**pared** (1)] of clay and canes (Acad.), *see* **desquinchar** (suppl.).

**QUINUAL**, Peru, according to E. I. Dueñas, this valuable mine timber (*Polylesis racemosa*) should be kept under water, or in a damp atmosphere.

**QUINTAL**, Almaden, Sp. orig. weight of ore (30 to 40 lb.) contained in an ordinary **espuerta terrera** (Ezquerria).

**QUINTO**, (2) Linares, Sp. one lead-smelting operation in **boliche** (5) furnace (Barinaga), *comp.* **vuelta** (4) (suppl.).

**RABERA**, Almaden, Sp. met. second inclined plane of a Bustamante (aludel) furnace, *syn.* **segundo medio plan**. That nearest the charge is called the **cabeza** or **primer medio plan** (Barinaga).

**RAJAZÓN**, Guan. Mex. **rajas** (1) or **astillas**, which are wide and thick (Hermosa), *comp.* **varazón** (suppl.).

**RAMAJE**, collection of branches.

**RAMAL**, (5) branch of a mine-working, road, railroad [**bifurcación** (2)], ditch, etc.

**RAMALEOS**, La Luz, Guan. Mex. irregular seams of quartz and calcite found near the veins, much curved and twisted, and subject to sudden increases in thickness—the result of crushing (John A. Church).



- RAMPLA**, pique r., Peru, inclined shaft, *see* **pozo** (2), **rampa** (3).
- RASTRO**, met. rake, *syn.* **rodillo** (2) **de púas**, *comp.* **rebajador** (suppl.); r. de madera, mech. prep. wooden rake or scraper used in German buddle, etc., *comp.* **azadón** (3).
- REBAJADOR**, kind of roller for making the surface of a charge even, in roasting ores, *syn.* **rodillo**, *comp.* **rastros** (suppl.).
- RECIBIDOR**, Mex. in the **patio** process, the **pileta** into which the condensed mercury falls from the **vaso** (6) (suppl.).
- RECIO**, Sierra Almagrera, Sp. first-class ore or prill—the ores are divided into (a) **recio**, (b) **primeras**, (c) **segundas**, and (d) **guardillones** (Ezquerria).
- RECORTE**, (2) Bol. cross-cut, *see* **crucero** (1); (6) **recortes**, *see u.* **emparejar** (3) (suppl.).
- RECRIBO**, *see u.* **emparejar** (3) (suppl.).
- RED**, Almaden, Sp. met. brick arches for supporting the charge of a Bustamente (**aludel**) furnace (Barinaga).
- REFOGAR**, Mex. in the **patio** process, to charge the **capellina** with the amalgam discs (Guillemin-Tarayre); Cerro de Pasco, Peru, to redistil retort-silver (O. F. Pfordte).
- REFRESCAR**, Mex. in the **patio** process, to add lime or other ingredient to the **torta**.
- REGISTRO**, (5) met. peep-hole of a blast-furnace, *see* **ojo** (14).
- REGUERA**, (2) met. gutter for slag or metal, *see* **teja** (2) (suppl.).
- REHENCHIDO**, r. de tepetate, Mex. in underhand stoping, waste rock piled on stulls or platforms (Hermosa).
- REJILLA**, (1) **rejillas fijas**, steel bars or perforated plates, usually set at an angle, for classifying coal.
- RELEVANAS**, *see u.* **pozo** (5) (suppl.).
- REMOLIDOS**, *see* **chinchas** (suppl.).
- RENDICIÓN**, met. yield, *see* **rendimiento** (1).
- REPOSADOR**, (5) *see* **crisol** (2) (suppl.).
- RESTANCA**, *see* **palanca-aldía** (suppl.).
- RESUBIDA**, Linares, Sp. in lead-smelting, after the **corrida** (3), the raising of the undecomposed charge, which has run into the **crisol** (2), to the higher parts of the bed (Sánchez)—the “set-up” of British smelters.
- ROCA**, (2) r. de nabos, ferruginous laterite; (6) r. muerta, Fr. Guiana, half-decomposed greda (4) or bed-rock, found at the head of placers.
- RODILLO**, (2) *see u.* **rastros** (suppl.).
- ROLLO**, (4) **rollos**, name given by Portuguese miners to round timber (R. B. Johnston), *see* **rollizo**.
- RUBIALES**, Cartagena, Sp. argillaceous bands in contact with iron ore deposits, or separating different layers of the same, rich in silica and magnesia, and stained by iron and manganese; they are probably the result of thermal action on limestone, dolomite and slates, and

are comparable to the salbands of lodes (J. Pié y Allué), *syn.* Sierra Alhamilla, alcahuete del hierro, Almería, láguenas (*q.v.*), lajas or launas, tierra roya.

**RUEDA**, (1) *r. de cajones*, mech. prep. wheel-elevator or "raff-wheel" (of Cornish crusher); (7) *r. de aspas*, mech. prep. washing or cleansing machine known as (Fr.) *patouillet*.

**SAHIU**, Port. *s. or tiro pela boca do furo*, blast. blown-out shot, *see* bocazo.

**SAHUMERIO** (smoke), Hualgáyoc, Peru, blende (Raimondi), *see* blenda.

**SAL**, (1) *s. de barco*, Huacho, Peru, salt from the "Pampas de las Salinas," which is more porous and less pure than the rest—the blocks scarcely ever exceed from 80 to 85 lb., and it is exported in vessels (*barcos*); *s. de garza*, occurs below the last in blocks weighing 5 or 6 arrobas; *s. de corazón*, the purest, having crystallised out slowly in the deepest *pozos*, the blocks being from 5 to 6 arrobas (Raimondi).

**SALINERO**, met. man who adds and mixes salt in roasting, etc.

**SALVADOR**, rescuer; *brigada de salvadores*, brigade of rescuers.

**SALVAMENTO**, **SALVAMIENTO**, safety, rescue; *aparatos de s.*, rescue-apparatus, *see* *aeroforo*, *escafandra de tubo* (suppl.).

**SANEAMIENTO**, (2) *trabajo de s.*, Almaden, Sp. work at surface by miners suffering from the bad effects of mercurial vapours (*Ezquerria*); (3) preparing ground by draining, etc., for burning charcoal, building, etc.

**SANGRÍA**, (3) a gallery [*galería* (1)] driven with the object of communicating two shafts (*Hermosa*).

**SAUCE**, **SAUZ**, willow.

**SÁVIA**, sap (of trees, etc.).

**SECADOR**, (3) met. drying-chamber or special apparatus for drying bricks, etc., before they are baked.

**SEIXO**, Port. a stone; *seixos facetados*, geol. facettèd stones of glacial, eolian, or glacial-eolian origin, equiv. Fr. *pierres à facettes*, Ger. *Facettengeschiebe* (glacial), *Kantengeschiebe* (eolian).

**SEPARADOR**, mech. prep. *s. magnético*, magnetic separator; *s. electro-magnético*, electro-magnetic separator; *see u. trómel* (suppl.).

**SERENAR**, *s. las vasijas*, vulg. to allow the kibble, etc., to lose its movement of oscillation (*Moncada*), *see* *serena*.

**SERPENTÍN**, **SERPENTINA**, (2) chem. worm; apparatus consisting of a continuous serpentine tube or tubes for superheating steam, etc.

**SIRVIENTE** (servant), Linares, Sp. in lead-smelting, the workman who cleans out the furnace and prepares the charges for the *maestro* and *lumbero* (*Sánchez*) = *ayudante*.

**SOGA**, (2) *á sogá* or *de sogá*, adv. lengthwise (of bricks), or with the long sides parallel to the wall, *comp. tizón* (2) (suppl.).

**SOL**, (1) Las Alpujarras and Sierra Almagrera, Sp. surface; a shallow working is said to be "*cerca del sol*" (*Ezquerria*).

- SOLERA**, (12) Guan. Mex. large oak timber sawn on two or four faces (Hermosa), *syn.* **cuartón** (1), *comp.* **güemba** (suppl.); (13) Almaden, Sp. a large **espuerta**, 2 arrobas in weight and holding 50 arrobas or  $2\frac{1}{2}$  pesos (5) (Ezquerria).
- SOLLAME**, Peru, cave or run, *see* **derrumbe** (1).
- SOMBRERETE**, (5) met. hood or movable roof of a German cupelling-furnace.
- SOPLADO**, (2) Bol. recent alluvial [**venero** (5)] consisting of fine detritus and poor in gold (Comynet).
- SOROCHE**, (2) Hualgáyoc, Peru, galena in small cubes or plates, when fine-grained = **acerillo**, in large crystals = **carne de vaca** (1) (Raimondi).
- SÓTANO**, (2) met. underground cellar in which mixtures of refractory earth, clay, etc., already kneaded and beaten, are preserved for some months, while they undergo a sort of fermentation (**podrida**).
- SOTERRAR**, to be buried (of mine workings).
- SULFATE** (**sulfato**), Tetela del Oro, Puebla, Mex. aluminous earth enclosing sulphates of iron and alumina, and giving an acid reaction (J. Guillemin).
- SULFURO**, (3) s. rojo, **realgar** (**rejalgar**) or AsS.
- TABACO**, **tabaco**! Sierra Almagrera, Sp. call for time allowed for smoking (Ezquerria), *comp.* **cadena** (11), **otra** (suppl.).
- TABLÓN**, (2) Sierra Almagrera, Sp. mech. prep. inclined table or frame (Moncada).
- TABOA**, Port. board, *see* **tabla** (1), *comp.* **prancha** (suppl.).
- TAMBOR**, (5) Mex. vent. cylindrical wooden case or drum, having an axle with six or eight vanes, worked by a handle on the outside (Hermosa).
- TAPA**, (2) roof of nitrate of soda or **caliche** (1), composed of a compact and resisting mixture of sand and clay, cemented by gypsum and salt (E. Kaempffer), *comp.* **congeló** (suppl.).
- TAPANARIZ**, nose-stopper, used in pneumataphores, *comp.* **pinzanasal** (suppl.).
- TAREA**, (4) Santo Domingo (island), about 1565 acre. The mine taxes are \$10 per 100 **tareas** (about 64 cents per acre).
- TARIMA**, Mex. vent. horizontal brattice in levels (Hermosa), *see* **tabique** (1).
- TEA**, candlewood, used as torches, *see* **antorcha**.
- TECTO** (ceiling), Port. hanging-wall or roof (R. B. Johnston), corresponds to Span. **techo** (1), *see* **alta** (1).
- TEJA**, (4) **tejas**, in lead-smelting, channels, outside the furnace, down which the slag runs before it is caught in vessels, *see* **reguera** (2) (suppl.).
- TEJIDO**, (2) tissue; **t. celular**, cellular tissue.
- TEMPLADOS**, Mex. in the **patio** process, silver ores, finely scattered (**pinta delgada**), usually with no other metallic mineral (Hermosa), *comp.* **calientes**, **frios**.



- TENDERSE**, Mex. to become sub-divided or floured (of mercury, in the patio process) (Hermosa), *syn.* **empanturrarse**, *see* **lis**.
- TENDIDO**, (8) Mex. in the patio process, drain or conduit from the **tin**as, *see* **cárcamo** (1), **pozas** (1) (suppl.).
- TEPES**, green sods ; in making charcoal, often used for covering the firewood before the coating of clay and charcoal dust is put on.
- TIMPA**, (2) met. **falsa t.**, tymplate.
- TINA**, (5) Cerro de Pasco, Peru, separation of silver amalgam from earthy matters (Raimondi), *see* **pozos** (5) (suppl.).
- TIRADA**, (3) met. withdrawal of a roasting charge, etc., the operation being complete ; (4) met. tapping a furnace, *see* **sangría** (4).
- TIRADOR**, (3) Vizcaya (Prov.), Sp. man who draws out the bars in the Catalan forge process (Barinaga).
- TIRANTE**, (3) **t. de prolongación**, pump. sweep-rods connecting water-wheel with pumps in shaft.
- TIRO**, (1) **primer t.**, Las Alpujarras and Sierra Almagrera, Sp. shaft (Ezquerria), *see* **pozo** (2).
- TIZÓN**, (2) **á tizón** or **de tizón**, adv. crosswise (of bricks), or with the long sides perpendicular to the walls, *comp.* **soga** (2) (suppl.).
- TOCAR**, (2) **t. la greda** (4), Fr. Guiana, alluv. m. to touch bottom, *i.e.*, to reach the bed-rock.
- TOLVA**, (3) *see* **cono** (4) (suppl.) ; (4) S. Sp. the distributor of a **mesa** (1) **de arroyo**, being a kind of small sleeping-table for separating the richest portion of the pulp (Moncada).
- TORNERITO**, Rin Tinto, Sp. man who works a winch fixed over a winze or **tornito**.
- TORNERO**, (3) Rio Tinto, Sp. man who works a winch placed over a shaft or **torno** (7).
- TORNO**, (2) **t. de engranaje**, geared winch, *syn.* **chigre** ; (6) Almaden, Sp. winze, *see* **clavada** ; (7) Rio Tinto, Sp. shaft, *see* **pozo** (2).
- TORO**, (2) Mex. in the patio process, the raw hide receptacle, having a wooden framework, into which the mercury is drained from the **manga** (2), *see* **u. pila** (1).
- TORRE**, (2) met. cylindrical tower or chimney of a blast-furnace, *see* **chimenea** (1).
- TORTA**, (2) mass or cake of coke, or other material.
- TORTILLA**, Cerro de Pasco, Peru, in the patio process, the **torta** when it is levelled over the floor (O. F. Pfordte).
- TOSTIÓN**, met. roasting (Sánchez), *see* **tostación**. NOTE.—In Spanish, the term **calcinación** generally includes roasting.
- TRABAJAR**, (1) **t. con carga**, Linares, Sp. mech. prep. to hand-jig with a bed [**cama** (9)] of **granza** on the sieve.
- TRABALHAR**, Port. to work a mine, etc., *see* **trabajar** (1) ; **t. por minas**, Braz. to dig shallow trenches on the course of auriferous quartz veins and pockets (Spix and Martius).
- TRAJE**, dress ; for **t. de los mineros**, *see* **vestido**.

**TRAJÍN**, *see u. lava* (3) (suppl.).

**TRANCO**, (2) met. bridge of a reverberatory furnace (Ibran), *see u. puente* (2).

**TRAVERSA**, Port. (2) cross-cut [Span. *traviesa* (1)], *see crucero* (1).

**TRECHEAR**, to divide a distance into certain lengths or *trechos* (= 50 to 100 varas) (Ezquerria).

**TRÓMEL**, mech. prep. *trómelas clasificadores* or *de clasificación*, sizing trommels, *e.g.*, *t. cilíndrico*, *t. cónico*, *t. de telas concéntricas*; *trómeles en cascada*, revolving screens arranged in series, vertically; *tromeles escalonados*, ditto arranged in series, longitudinally; *t. separador*, separating trommel.

**TROZO**, trozos, Chacas, Peru, lump-ore the size of an egg.

**TULMAC**, Huamachuco, Peru, a plant whose juice is used in gold-amalgamation (Santolalla), *comp. jurubeba* (suppl.).

**TUMBA**, (2) *see u. caja* (21) (suppl.).

**TURBIO**, IA, adj. muddy; *lodos turbios*, mech. prep. liquid slime.

**VÁLVULA**, v. de chapa, ordinary lifting valve (Ezquerria); v. de portezuela (2), valve hinged at one end, like a clack (Ezquerria).

**VARADAS**, Sierra Almagrera, Sp. vacations of the miners, which include *semana santa*, *feria de cuevas*, and *fiestas de Navidad* (Moncada).

**VARAZÓN**, Guan. Mex. slender twigs of branches (Hermosa), *comp. rajazón* (suppl.).

**VASO**, (6) Mex. in retorting amalgam, in the patio process, the conical condenser, with a concave bottom, in which the *candelerero* (6) is placed, and which holds the *capellina*, *see recibidor* (suppl.).

**VEIO**, Braz. according to Paul Ferrand, the old miners classified all placer-deposits into (a) *veios*, alluvial deposits forming the present beds of rivers [*see veia* (2)], (b) *taboleiros*, alluvial deposits on the banks of rivers or lower bench-deposits, and (c) *grupiaras*, higher bench deposits, or those usually found on the flanks of mountains; the above corresponds, respectively, to the *minas bajas*, *sabanas* (2) and *aventaderos* (1) of the Colombians.

**VENTANILLA**, (4) met. door of a furnace, *see u. puerta* (1).

**VENTERÓN**, met. flue of a reverberatory furnace, *syn. tragante* (5).

**VERGA** (rod), Port. timb. cap-piece or cap (R. B. Johnston), *see capa* (4).

**VERTEDERO**, (4) mech. prep. any inclined launder, channel or passage which conducts water or pulp to or from a dressing appliance.

**VIROTILLO**, b. constr. short vertical beam, without a *zapata*, resting on a horizontal beam, and supporting a horizontal or inclined one (Acad.), *see viga*.

**VIRUTAS**, shavings; v. de hierro, scrap iron.

**VOLTEO**, Cerro de Pasco, Peru, the mixing of the magistral in the mud-heap—followed by the *hormiguillo* (2) and *incorporo* (suppl.).

**VUELTA**, (4) Almaden, Sp. one complete operation in the Bustamante (aludel) furnace, *syn.* **cochura**, *comp.* **quinto** (2) (suppl.); (5) Bol. = repaso.

**X, la X**, Cartagena, Sp. hoist. guide used for kibbles or esportones (Moncada), *see* **corredera** (5).

**YAUCA**, *see* **llaucha**, (2) (suppl.).

**YELMO**, *see* **casco** (2) (suppl.).

**ZABALETA**, Linares, Sp. met. ash-pit of a furnace (Sánchez), *see* **cenicero**, *comp.* **lunbrera** (4) (suppl.).

**ZAMARRA**, (1) *see* **lobo** (2) (suppl.); (2) bloom (of a Catalan forge). equiv. Fr. **loupe**, **massé**.

**ZAPATILLA**, (2) Huamachuco (Prov.), Peru, timb. sole-piece (Santolalla), *see* **solera** (3).

**ZURRAPA**, Albacete (Prov.), Sp. raw sulphur containing 5 or 6 per cent. of impurities (Barinaga).





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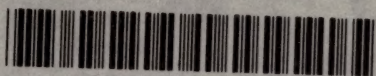
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